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AN ESSAY ON DRAINING.

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Of Westmoreland County, Va.

For which the Committee of the *Maryland State Agricultural Society* recommend that a Premium be awarded.

[*Ordered by the Board of Managers to be published in the American Farmer.*]

The subject of draining, proposed by the Society for one of its premiums, is as comprehensive as it is important. In its largest sense, it embraces the theory as well as the practice of the art; and a complete essay would require an examination of its principles as a branch of science, and comprehend not only such draining as the majority of agriculturists are interested in, but also the system of thorough draining now general in England, and the embanking and reclaiming tide water marshes.

It would be easy to compile, from standard works now extant, such a treatise. But to the learned in such matters it would not be new; and to the mere practical farmer it would be of little value. Reclaiming extensive tide water marshes is a work rather for the engineer than the farmer; and the English system of "thorough draining" is too expensive for our country, where land is cheap and labor dear, and is, perhaps, not requisite in the climate of the United States, which is so much drier than that of England. What is really wanted by the generality of agriculturists, and, it is presumed, desired by the Society, is a plain, practical treatise, brief, but comprehensive, embracing all that is necessary to the proper draining of the arable land of ordinary farms, and the best and cheapest mode of reclaiming the swamps and wet spots to be found on almost every farm of any extent, especially on tide water. To supply this desideratum is the object of this unpretending essay.

The subject will be best considered under the following heads:

1. The reclaiming and draining swamps, or low interval lands for meadows—the profits of such undertakings contrasted with the expenses.

2. The draining of flat and retentive arable lands, with the best means of keeping them dry, and the advantages of the process.

3. The draining springy lands and bog meadows.

1st. *The reclaiming and draining swamps, or low interval lands for meadows.*

There is no improvement in agriculture which seems to have been so much neglected, and the profits of which are so little understood, as the reclaiming and draining meadows. Our ancestors confined their clearings to the high and dry grounds; and, to this day, much the larger portion of the natural meadows, of the Atlantic States, remain in their original condition. This has arisen, in no small degree, from indolence and the spirit of emigration, but may be mainly attributed to over estimating the difficulty and expense of such undertakings, and underrating their profit. Nearly all these natural meadows possess the same general characteristics. They are rich vegetable and alluvial deposits, usually from thirty to one hundred yards in width, surrounded by higher grounds—have generally, running through them, streams of greater or less volume, and, before draining, are not only often flooded by the main streams, but are always wet, from the oozings of the numerous springs on their borders. Many of them extend from the high lands to the head of the inlets, and salt marshes, and the streams, running through them, communicate directly with the tide. Near the salt water, the growth of wood upon them is very inconsiderable, consisting of willows, alder, and other shrubs. Higher up, and upon the swamps, in the interior, fine timber, of maple, gum, poplar and ash, of sufficient value to pay greatly more than the cost of clearing, is found.

In their natural state, these low swampy lands are not only valueless, but are positive nuisances, interrupting free communication, shading, by the growth upon them, surrounding lands, harboring animals destructive to the grain crops, and, by the malaria exhaled, spreading pestilence and death around them.

To reclaim them, as the writer knows from experience, is neither very difficult nor expensive. The process is this: Commence the main ditch at the lowest point. Let it be proportioned to the quantity of water to be carried off. Usually a width of three and a half feet—a depth of 2 to 3 feet, varying with the fall—will be sufficient; though, in some cases, one much larger may be required. This ditch should not follow the natural channel of the stream, but should be cut on one side of the meadow, as near as possible to the rising ground, and the stream should be turned into it. A smaller ditch, just sufficient to carry off the spring water that oozes from the banks, and the rain water that may come down them, should be cut on the other side of the meadow. This last

ditch need not in general be over 1½ or 2 feet wide. Both these ditches should extend from the highest to the lowest point of the meadow, and be cut as near the base of the high land as possible. When these ditches have been properly made, the drainage will be nearly complete. To make it more perfect, if the meadow is extensive, small cross drains, communicating with the side ditches, may be cut, at intervals of from 50 to 100 yards. The advantages of this plan are, that the meadow is entire; whereas, if the main ditch should follow the course of the stream, which inexperienced persons are apt to think necessary, three ditches would be required instead of two, (for lateral ditches cannot be dispensed with;) the meadow would be divided into two narrow strips, a considerable portion occupied by the ditches, and its beauty greatly impaired.

The small cross drains, which need not be over a foot wide, aid in the perfect drainage of the meadow, and, at the same time, afford the means of irrigating the whole, by gates, or even temporary obstructions in the main ditch. All these drains should be open, and the earth carefully removed from their sides; so much of it as may be necessary should be used to fill up the bed of the stream and other irregularities in the surface of the meadow, and the remainder may be very profitably used in making compost: indeed, it is believed that the rich materials taken from the ditches will often exceed in value, as manure, the cost of making them. This branch of the subject might be continued by explaining the mode of reclaiming, by means of sluices and tide gates, such portions of these meadows as may be under the influence of tides. But this is deemed unnecessary; for, in the estimation of the writer, salt marshes are more profitable for early grazing, which they afford in abundance, to the relief of the high lands, than they would be if reclaimed; and reclaiming them is attended with no little expense; and the works, when constructed, are, moreover, liable to many casualties. Portions of those marshes may, however, from time to time, be very easily reclaimed, by covering them with the sand that is brought from the high land down the main ditches, rendering it necessary to clear them out at least once a year. The sand is naturally drawn to the lowest point of the ditches, and, as taken from them, may be thrown, with the shovel, or conveyed by carts, on convenient portions of the marsh. Thus covered with sand, these marshes will produce luxuriant crops of herds grass, which does not appear to be affected injuriously by the occasional floodings of the tide. On several spots of this kind, good hay has been cut for several years past.

The profits of such improvements are almost incredible, and the cost by no means considerable. The writer has reclaimed several of these meadows, of greater or less extent; and, perhaps, the most satisfactory mode of considering this part of the subject will be to state the results of his own undertakings. A large part of the labor of ditching and reclaiming his meadow has been done by the farm hands, when not occupied with pressing operations, and profitable employment thus found for them in seasons of comparative leisure. He cannot, therefore, state precisely the expense. The ditching, when done by the job, will cost from 2 to 6 cents a running yard, varying with the nature of the ground and the dimensions of the ditch. Ten dollars an acre, he thinks, would in general cover the cost of draining, and an equal sum, when there is not much timber on the land, would prepare it for the plough. Such meadows, when set in timothy and herds grass, will pay a net annual profit of more than 6 per cent on $500 an acre. Why, then, are they not worth $500 an acre? The security is better than bank stock, and as good as a mortgage. The profit is not mere conjecture. On a meadow of this kind, containing 3 acres, the writer has, for three successive years, reaped, at one cutting, from 2½ to 3 tons of timothy and herds grass hay per acre; a portion of which has been sold, but a large part consumed by his own horses. He finds, from his accounts for last year, that, after consuming more than a fourth of the crop, he sold, from this meadow, $79 worth of hay, on the farm, and 100 miles from any considerable market town. A northern gentleman, who purchased the greater part of it for the use of his teams at work in Virginia, said it was much better than the hay brought by him from Maine. Now, suppose the whole crop to have been worth no more than $100, (when it would, in fact, have sold for at least $110) we have $33⅓ per acre, which may be considered the nett profit; for the late pasture for cows and beeves, and the early for ewes and lambs, is more than equivalent to the cost of making and saving the hay, and keeping the meadow in order. Upon other meadows of the same kind, but of greater extent, farther removed from the tide, and, consequently, drier, fine crops of corn have been made, without failure in any instance, averaging, for several years, not less than sixty bushels to the acre. And upon a part of one of them, a small experiment was, last year, made, in wheat, which was entirely successful. From two-thirds of an acre, on which seven-eighths of a bushel of Zimmerman wheat was sowed, after a heavy crop of corn, twenty-five bushels were reaped; whilst, from much larger portions, a fine crop of ordinary red wheat was made; but, not being measured separately, the quantity per acre could not be accurately ascertained. Such meadows, especially when so near the head of tide water as not to be capable of being made dry at all times, should be left permanently in grass. Indeed, it is believed that hay would be a more profitable crop, on all such reclaimed meadows, than grain; and the writer designs to lay down to grass, as soon as possible, all the land of this kind reclaimed by him. Independently of the profits of the grass crop, it possesses this advantage over grain: it effectually secures reclaimed land from sinking. The fine reclaimed meadows of Hill Carter, of Virginia, and others, formerly so profitable, would have continued so forever if they had been set in grass, instead of being annually cultivated in corn. They are now utterly valueless; the vegetable matter of the soil having been decomposed, by exposure to the atmosphere, from frequent ploughing, the land has, consequently, sunk, and the tide resumed its dominion. The meadows reclaimed by the writer, have added greatly to the profits of the farm on which they are, and fifty dollars per acre would be cheerfully paid for more of the same kind, in their natural condition, if it were possible to have them added to the estate. He would regard the expense of reclaiming them as insignificant, compared with their intrinsic value.

2. *The draining of flat and retentive arable lands.*—Soils of this kind abound every where, but especially on farms near navigable rivers. Before being drained, they are a source of continual vexation, and little profit; they are cold and unproductive, being little benefitted by lime, marl, or any kind of manure, and suffer equally from a dry as a wet season.

The draining of such lands is not difficult. If they lie near the base of higher grounds, as they frequently do under the first range of hills, from the river, it will be necessary to cut a deep ditch all around the base of the high grounds, to catch the rain and spring water as it comes from the hills, and to carry it to some natural outlet. Indeed, lands so situated, whatever may be the nature of the soil, should be treated in this manner. It rarely, if ever, happens that the most flat and retentive soils have not sufficient fall for their effectual drainage. In this case, as in other maladies, "prevention is better than cure." Although such lands appear perfectly level, to a casual observer, yet they will be found, on careful examination, to be most generally inclined planes, and it is impossible to drain them by any number of ditches, running with the inclination. The rain water that falls upon any given spot is rarely sufficient to do injury. It is the water that comes from higher grounds, however little elevated, that does the mischief. This must be kept off; for, after the land is saturated with water from the higher grounds, it is in vain, by drains or ditches, however deep, to attempt to remedy the evil. The running water from the surface may be thus removed, but the land will remain wet until dried by the slow process of evaporation, which, as it goes on, so reduces the temperature of the soil, as greatly to retard, if not to arrest, vegetation. Ditches should be cut horizontally across the inclination of the land, sufficiently numerous to prevent the lower lands from being flooded, to any extent, by the water that falls on the land a little higher: these should be intersected by other deeper ditches, following the natural drains in the land, to convey the water entirely off. All these ditches should be open, and the earth carefully removed from their banks. A few rows should be ploughed parallel with them, and crops planted quite to their edges, so that no space be lost. The main ditches should be three feet deep, at least; the horizontal ditches need not, in general, be so large or deep. The ditches here indicated, with careful water furrowing, and grips, intersecting the beds at their lowest point, and communicating with the ditches, will be found to free the soil effectually from surface water. To perfect the drainage, however, and to make the soil mellow and productive, it should be ploughed deep—(from seven to ten inches)—the subsoil plough following in the same furrow. This system, as the writer can testify from experience, is effectual. Lands, before cold and unproductive, will, under this treatment, respond at once to lime, marl and putrescent manures, producing luxuriant crops of grass and grain. The writer is now gathering at least forty bushels of corn to the acre, from land thus treated, which, a few years ago, did not produce more than fifteen or twenty bushels.

The productive power of such lands, in wheat, is, if possible, still more strikingly increased by this process.

As subsidiary to draining, horizontal ploughing is very important. Although certainly practised by the ancient Romans, it has been called one of the greatest improvements of *modern times*. Whether ancient or modern, its importance cannot be overrated. It retains the moisture on the arid hill sides and slopes, where it is most needed, and protects the valleys and bottoms, that are liable to wetness, from excess of water.

When the slopes are extensive, small horizontal ditches (which may be made, in part, by the plough) will occasionally be necessary, to protect the ploughing from the effects of heavy, dashing rains. It is not our purpose to describe the process of horizontal ploughing, but simply to mention its importance incidentally, as connected with the subject of this essay.

3. *The draining of springy lands and bog meadows.*—There will be found, upon most farms of any extent, spots, of greater or less size, that seem to be filled with water, as a sponge: frequently no springs are visible; and a casual observer is at a loss to account for their wetness. The cause is to be found in numerous small springs, coming from the higher grounds, and oozing out in these low places, where they seem to be absorbed, as if by a sponge. The soil of these spots is almost entirely a vegetable deposit, and is often *peaty*. Such lands may be dried either by open or covered drains; but, as the quantity of water to be carried off is not considerable, and the soil is porous, covered drains answer effectually; and as they occupy less, and are more permanent than open ones, are greatly to be preferred. To reclaim lands of this sort, a ditch, sufficiently deep to take off the springs from the high ground, should be cut along its base, and one or more ditches down the inclined plane, (for all such places will be found to have some inclination) to carry off the water. If the land to be drained is of any extent, it will generally be found necessary to have several ditches across the inclined plane, parallel to each other; otherwise, the soil being porous, the water from the first ditch will penetrate through it, and (if the expression may be used) *crop out* again, at a lower point, rendering all the land below too wet for cultivation. A sufficient number of cross ditches should be cut to prevent this, for which no general rule can be given: the number must be determined by the judgment of the operator. The cross drains must, of course, communicate with those intended to carry off the water. If the drains are open, no particular directions need be given in regard to them, further than to remove the earth from their banks, and to keep them free from shrubs.

Many years will, probably, elapse before draining tile will be generally introduced in our country. As a substitute for them, various expedients for making covered drains have been resorted to, with greater or less success. Perhaps the best and most permanent are made (when stone is to be had) by filling the ditches partially with small stones—after covering them lightly with straw or leaves, returning the earth. Three common pine or other poles laid in the bottom of the ditch, and thus covered, have been found to answer very well. Small sticks of alder or willow, or other green wood cut from the swamps, about eighteen inches long, set up in the bottom of the ditch, crossing each other, and inclining against the side, so as to make a fork at top, then filled in with longer branches, and lightly covered with straw, before returning the earth, have been found to answer well in England. A plan adopted, and extensively used, by Edmund Ruffin, Esq., of Virginia, one of the most successful and enlightened agriculturists in the Union, deserves especial notice. He uses common billets of pine, split, as if for making shingles, and set up in the bottom of the ditch, resting on one side of it; these are put close together, and the earth returned upon them. The drains upon this plan are successful, and, according to his experience, cheaply and effectually made. The writer of this has seen cornstalks recommended for filling covered drains, and, two years ago, made

two small experiments with them himself, which, so far, have answered the purpose.

I have not deemed it necessary to recommend the use of any machinery, even the most simple, as the rafter or spirit level, to aid in draining. From long experience, I have ascertained that *a practised eye is the best level;* it is, at least, sufficient for all practical purposes; and the less complicated any improvement in agriculture is rendered, the more likely it is to benefit the majority of farmers.

The subject is by no means exhausted; much learning might have been exhibited in treating it, if the author had been ambitious of display; but his desire is, to be useful; and if this essay shall be the means of teaching the least informed, among his colaborers in the noblest of pursuits, how to make wet land dry, cold land warm, waste land productive, and to convert nuisances into blessings, his highest ambition will be gratified. W. N.

November, 1848.

AN ESSAY ON DRAINING.

BY JOHN WILKINSON,

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For which the Committee of the Maryland State Agricultural Society recommended that a Premium be awarded.

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The writer respectfully submits the following Essay to the committee on Essays of the *Maryland State Agricultural Society*, hoping that it will not be uninteresting, although it may have no claim to the prize offered by the Agricultural Society.

That the principal advantages of thorough judicious drainage are quite generally understood and appreciated, I have not a doubt, but, the opinions generally entertained relative to the necessary expense of the proper construction of the various kinds of drains in use in this country, being so grossly erroneous, it will render the usefulness of a thorough replete practical essay on this subject, in point of interest and value, paramount to one on any other practical branch of modern agriculture. There is no branch of more general or universal interest, nor any that seems so infinite in its immediate adaptation to the wants of the producer. Its value is not confined to any locality, or its benefits peculiarly adapted to the necessities of any particular set of culturists, but it is of equal interest to the tiller, in the frigid, temperate or torrid clime. In this country, no state, no county, no town, plantation or farm can be said to be beyond the reach of its universal adaptation.

In the culture of the cereals, the grasses, roots and fruits of every description, tobacco, cotton, and even that semi-aquatic staple of the south, (rice,) its advantages, if a judicious system be practiced, are most obvious on portions of almost every plantation or farm.

Draining is now allowed to hold the first place among the mechanical methods by which those changes are to be produced upon the soil, that are to fit it for the better growth of valuable crops.

In all localities, the following desirable results of an efficient drainage of the land may be confidently anticipated, viz: the removal of all putrid stagnant pools of water; a ready escape given to the excess of water that falls in rain; subsoil waters that would prove injurious on the surface, arrested in their ascent, whether by capillary action or by the force of springs; the surface soil preserved from undue moisture; substances noxious to cultivated vegetation which frequently linger in sub-soils, either neutralized or effectually eradicated, and additional vigor or energy imparted to the vegetable products, by supplying proper vegetable aliment to the soil, whether from natural or artificial sources.

When this desirable state of the soil is once effected, it constitutes a most important and permanent improvement, and one which can be produced by no other available means: its permanence, however, will depend on the manner in which the drains are constructed, and the order in which they are kept. If by neglect, the drainage is more or less impaired, the original state of the land, will again gradually return.

In soils which are thoroughly drained and rendered properly porous, there is a constant descent of fresh water through them, which causes a similar constant descent of fresh air through the pores, from the surface to the entire depth to which it is mellowed and drained. When the rain falls, it enters the soil, and more or less displaces the air which is contained in its pores. This air either descends to the drains, or rises into the atmosphere. When the rain ceases, the water as it sinks, again leaves the pores of the soil open, and fresh air consequently follows.

It is, as it were, drawn in after the water, as the latter gradually passes down to the drains: thus, where a good drainage exists, not only is the land refreshed by every shower that falls—not only does it derive from the rains those important substances which occasionally, at least, are brought down by them from the atmosphere, and which are in a great measure lost where the waters flow over the surface—but it is supplied also with renewed accessions of fresh air, which experience has shown to be so valuable in promoting the healthy growth of all cultivated crops.

But other consequences of great practical importance follow from these immediate effects.

When a soil is once freed from the constant presence of water, it gradually becomes drier, sweeter, looser and more friable. The hard lumps of the stiff clay lands to a great extent disappear, there is less resistance offered to the plow, and more easy and economical tillage is the happy consequence.

In soils that are undrained, the putting in of spring crops is retarded, and the consequent backwardness of them during the season, and the losses attending the lateness of the harvest in autumn are often complained of.

Good drainage often produces effects *equivalent to a change of climate.* Proper and efficient drainage carries off the water so rapidly as to bring the land into a proper state for tillage soon after the rain has ceased, and thus, to a certain extent, it rescues the farmer from the fickle dominion of the uncertain seasons.

To the skilful and intelligent farmer, who is master of his profession, and who applies every available means to the successful prosecution of his art, the promise even in our age and country is sure "that seed time and harvest shall never fail."

But it is my design in this essay, to make *utility* the polar star, and brevity the compass; hence, I will not dwell on the philosophy of drainage, but proceed directly to describe what I consider the best system of practice, in this great work of reclaiming valueless lands, and of improving to a considerable, and often an astonishing degree, those soils which in an undrained state, were adapted only to production of the crops least profitable to the producer. As it is

impossible to do good work, without good materials and good tools. I will first describe what materials I have used with the greatest success, and which I consider as most economical and acceptable in this country at the present time; and also fill out a complete set of implements and vehicles necessary for prudently prosecuting the construction of the varieties of surface and under-drains which I shall recommend.

From the fact, that in those portions of our country where drainage is most needed, and where the practice would seem to promise the most liberal and sure return, there is quite generally an abundant supply of *stone* for the purpose of filling under-drains, and that they are for general use, preferable to any other material, I recommend them as the staple of all draining material. In the absence of stones, tiles, plank tubes, perforated by a small auger or bit, rough wood or poles, brick, or even turf may sometimes be used with economy.

It is, however, very difficult, and in some localities utterly impossible to obtain draining tiles, and I would take the liberty of suggesting to brick makers, under whose notice this article may chance to fall, the propriety of their investigating the subject, to acquaint themselves with the extent of the demand for tile for this purpose, that they may see whether it is not sufficient to warrant them in manufacturing, and thus placing in the hands of the improver, the necessary material for the successful prosecution of his work.

Now in the catalogue of implements and vehicles which I shall recommend as absolutely necessary in the economical construction of drains there will be none but such as I have had abundant experience in the use of, to enable me to judge correctly as to their necessity and utility.

Although I have yet to see my fortieth year, I believe I can safely say that my experience in the practice of drainage, has been greater than most farmers of this country of 80 years. From my early youth, up to the present time I believe there has not one year elapsed, in which I have not participated in the construction of drains—and as undeniable evidence of the success and utility of the system I practiced, some 50 acres of land may be seen in old Dutchess Co., N. Y. which by the identical process I shall now describe, has been reclaimed to perfection. I selected as the field for my labors in this branch of husbandry, both the miry peat bed, and the undulating clay fields which were by nature too wet for grass, and succeeded in every instance in rendering them well adapted for the production of all the cereals as well as roots, and grasses; hence I have full confidence in my system, and with a mindfulness of its infinite importance, to the farmer, and the guilt of him who would, in the assumed capacity of a teacher, recommend a system which was yet untried, and one, however plausible in theory, that might prove fallacious in practice, I confidently submit the following as the result of my own practical experience.

Having above described the materials to be used for filling under-drains, next in order I will enumerate the vehicles and implements necessary to the excavation of drains, and describe their individual uses and proper form of construction, with the bill of cost of each; and conclude by describing the proper mode of laying them out, or their proper location, and the mode of procedure in the construction of both open and under-drains, with the average expense per rod of 16 feet.

1st, A *pair of strong oxen*, which should always constitute a part of the team on the farm, hence, I shall not include their value with the bill of apparatus for draining.

2d, *A farm Truck* (see p. 308, vol. vi, Am. Ag.)	$35.00
3d, *A Hill-side Plow*,	10.00
4th, The indispensable one handled *Subsoil Plow*,	6.00
5th, 3 *Long handled round pointed shovels*,	3.00
6th, 2 *Picks*, at $1.50	3.00
7th, 2 *strong iron bars*, for removing large stones or rocks	4.00
8th, 1 *Broad Hoe*,	75
9th, 1 *Iron Draining Scoop*,	1.50
10th, 2 *Digging Spades*, a $1.00	2.00
11th, 1 *Knicking do*	1.00
12th, 1 *Turf Knife*,	2.00
13th, Cement pipe laying apparatus, consisting of 2 turned wooden rods, with handles, one, 1 inch in diameter, the other 1¼ inches diameter, each 6 ft. in length, a $1.00	2.00
14th, A box into which the cement mortar is placed, and by which it is conveyed to its place in the drain,	50
15th, 2 mason's trowels, with which the pipe is formed, a $1.12½	2.
16th, 2 *Single Yokes*, in which the oxen work tandem to the sub-soil plow in the narrow drain, a $2 50	5.00
17th, 1 *Ox Chain* for the plow,	3 00
18th, 1 do do with large hook at one end, through which the chain will slip or render, for removing stumps or large stones,	3 00
19th, 2 pair *Strong Trace Chains* for using the oxen in single yokes in the drain, a $1 00	2.00
20th, 2 *single Whiffletrees*, one 30 inches long, the other 16 inches; the short one for the hindmost ox, in the narrow drain, a 50c.	1.00
21st, 1 strong *Back Strap*, with *Pad* to support the traces for hindmost ox in the chain,	1.00
22d, 1 *pair Muzzles* for oxen, that they may not wander in pursuit of grass,	80
23d, 1 long *Yankee Whip*, with short lash for driving tandem,	12
24th, 1 old axe for cutting roots, not included	
25th, 1 *Spirit Level* and Rod,	1.38
26th, 1 *Rail-road Barrow*,	2 25
27th, 5 *Plank* for wheeling on, 25c. each	1.25
28th, 1 *Large Basket*, with which to carry the fine shavings, to cover the stones in the drains,	50
29th, 2 honest Irishmen, (American trained) and one *Yankee* to manage the team, at liberal wages.	
Total,	$93.00

It will be seen that the articles named in the above list, are nearly all such as are needed for other purposes on the farm, and may be used for all, hence the sum of their cost is by no means to be charged to the draining account.

The importance and economy of a careful and judicious survey of the grounds to be drained, before deciding what number of drains are necessary, or where they should be located, is not generally fully understood.

I have in many instances saved at least one-fourth in the length of drains required for draining a given piece of land by comparing the different directions which I had staked out as the most effectual. This should not be done hastily, but with great care and judgment, as it is of the first importance in the great work of reclamation.

The direction, extent of the drains, their dimensions, and location, for the drainage of a certain area, should always be decided on, and the material with which the drains are to be filled, hauled and deposited convenient to the drains, before the implements or operatives are brought to the spot, that no time may be lost by the men and team: "time is money."

The work of drainage should, as far as practicable, be done in the dryest weather, for several reasons, of which the following are the chief. There will be less water in the drains to obstruct the work; the weight of the earth to be shovelled will be much less on account of its dryness, it will adhere less to the shovels, and the whole work may be performed with much more facility and pleasure.

But where there is perpetually an excess of water on the surface, as frequently occurs in undrained peat lands; surface furrows should be plowed by the hill-side plow, always commencing at the lowest place at the main outlet, but on the upper side of the line before selected as the location of the main discharging drain, and the water furrows should in all cases be turned "down-hill" or with the descent of the surface, in order to check the water that may be running in the surface soil, and conduct it in the furrow above described, to the main outlet, thus effectually preventing its obstructing the construction of the main drain, or outlet, which is the next work in order after the surface furrows have been plowed.

In all cases where the plow can be dispensed with, (that is, where the soil is such that no picking is required, but may be readily excavated by means of spades and shovels,) it is economy so to do; for in the use of the team and plow, in lands which are excessively wet, the banks of the drains are unavoidably trodden in, and the tough grass roots are trodden in to a great depth, which materially obstructs the shovelling, a much greater amount of earth must necessarily be moved by the shovels; besides the plowing of miry soils is very fatiguing and discouraging to the team.

Open or surface drains should in all cases be avoided, if possible, and the invisible miracle working under-drain used in their stead, as the latter if once properly constructed will need no repair for centuries, and will be more effectual, and from its subterranean position does not occupy or interfere with the tillage of the surface, or with the growth of crops; on the contrary, I have with interest and pleasure witnessed the effect of under-drains in preventing the roots of wheat from being displaced by the alternate freezing and thawing of spring. In the instance alluded to, the land had not been subsoiled; had it been, the preservative effects, which were most obvious directly over the drain, would have been less so, as it was the result of thorough drainage, by which that indispensable deracinating agent of frost, had been effectually removed.

In locating the under drains in peat lands, it will generally be found necessary, only, to make the main drain, which should be in the lowest place and larger and of greater depth than the side or lateral ones, and the side ones surrounding the wet land on either side of the main drain, into which they should, if the descent will admit of it, discharge from both ends. Lateral drains should be so located as to surround all the wet land, and I have been most successful where I have sunk them quite deep, and entirely in the dry ground from which the springs generally issue, and I have always observed that the greater depth at which the veins of water are intercepted, the more effectual will be the drainage.

If the main drain, and the surrounding lateral ones should prove inefficient, a few small ones may be made between these, so located as to intercept the veins which occasion the remaining wet spots, on the upper side of them, and some distance from them, in order that the rain may be cut by the drain a sufficient depth below the surface to be received by it in the part filled with stones.

The stones in the drain should never approach the surface nearer than 12 or 14 inches, that they may admit of subsoiling over them to that depth.

This rule, I believe to be of universal adaptation, that is, as well in wet clay lands, as in peat beds. A similar process may be adopted, or the same principles may guide us in the location of drains for reclaiming wet undulating clay lands, as in the peat bottoms, except that it is sometimes only necessary in clay lands that are steep, to cut a *deep* drain at the brow of the hill, which should always have but a slight descent, and should run nearly parallel with the hill-side, from one extremity of the enclosure to be drained, to a lower point at the opposite parallel side, from which it should continue by returning obliquely to the fence on its opposite side, and if the descent is not too great, these two diagonal drains may extend from the highest point, (at which they commence) to the lowest in the boundary of the enclosure, where the main drain makes its exit. I say, in clay hill-sides which are too wet, only the above amount of draining will be found necessary, in general. At all events it is well to test the efficacy of these two diagonal drains for such land, before making more; should they prove inefficient, then proceed to cut intervening parallel drains until thorough drainage is effected. In the above, a case is supposed where the lot to be drained is a section, from the base to the summit of an extensive hill-side, and not a section of a small conical hill; and the character of the soil for several feet from the surface, is quite uniform, having no strata particularly porous, but all sufficiently so, to conduct veins of water, and also to absorb from those approaching the surface, a sufficiency to render it too wet for tillage. It is in this variety of soil, and in fact, in all upland drainage, that the advantage of a judicious use of the subsoil plow, in subsoiling the whole of it, at right-angles with the hill-side, previous to any other drainage, will be most apparent.

In some instances it will obviate the necessity of any other drainage, but in case of its proving an inefficient drainage, the labor is by no means lost, as it will not only facilitate the subsequent process of drainage by under-drains, but will vastly enhance the value of the land for production.

The infinite value of a judicious use of the subsoil plow is not generally known any more than plow makers are generally acquainted with the best mode of constructing it. It should never have but one handle, for two reasons, first, that a two handled one cannot be used with advantage in plowing drains, in which we consider them indispensable, and secondly, from the fact that it is designed only to mellow the earth, leaving it precisely where it was, it renders the travelling in the furrow behind it (where the plowman must walk with the two-handled plow) very uncomfortable; this is avoided in the use of one handle, as it then admits of the plowman walking on the land.

This variety of plow is entirely unfit for use without a wheel under the beam. The advantage of the hill-side plow, over the common surface one, is, that

t admits of plowing or turning the furrow either way, which in returning the earth into under-drains greatly facilitates the work.

The use of cement pipe for conducting the water in a subterraneous passage from one wet spot to another, through dry intervening lands, to lead the water on to one principal discharge drain, will be found very economical, particularly where stones are difficult to obtain and tiles are expensive. Their construction is very simple; they may be made by any common laborer, as well as by a regular mason.—Want of room will forbid my giving in this essay a full description of the most simple and economical mode of constructing cement pipes; but with the consent of the editor of the American Farmer, a full description shall appear in some subsequent No. of that valuable journal.

Where cement pipes are to be used for conducting the water received from under-drains, all that is necessary is to sink a well, and stone it to the depth of some 3 or 4 feet below the bottom of both the ingress and egress drains, that the sediment from the under-drains may be deposited in the bottom of the well for this purpose, which with a leaden strainer on the upper end of the cement pipe will effectually prevent its collecting in the pipe. These wells should always be covered, for which a flat stone is preferable, but if not obtainable, timber may be substituted.

The dimensions of these wells need not in general exceed 3 feet in diameter, (when stoned,) and 6 feet in depth.

I have for several years, been in the practice of using the same principle in constructing common stoned under-drains, to prevent the sediment from collecting in the nearest level portions, and thus destroying the work; by sinking small portions of the drains, (say ½ rod in length) at intervals of 12 or 15 rods, one foot deeper than the drain is on either above or below, and then filling these wells with small stones to a level with the bottom of the drain, over which the drain is then constructed as if they were not there.

The effect is to collect all the sediment, and allow the pure water to escape: they have in every instance had the desired effect. In all cases where the bottom of under-drains is soft peat or quick-sand it will be necessary to form a sole for the drains to prevent the material, used as a conductor, from being embedded in the bottom. I have used flat stones, (irreguar shaped,) closely lain, hemlock boards, and tile soles, with equal success, but of course the boards will not be as durable as the imperishable materials.

Except where the quantity of water to be conducted is very large, I have in all soils, and under all circumstances, used with success the following mode of placing stones in under-drains: viz:

Commence by selecting stones of a medium size, say of the length of a man's hand, and as near egg-shaped as can conveniently be selected, and pave the entire bottom of the drain by setting them on the small end, always beginning at the upper end of the drain; the operative walking backward in it, or facing the work completed.

All loose earth should be removed by scraping the bottom of the drain with the "broad-hoe" and occasionally shovelling it out. The stones should be hauled to the side of the drain on the "truck," which is so low that the stones on it may be reached by the man in the drain. After the bottom is paved, the largest stones to be used are next thrown in promiscuously, the interstices are filled with the next largest, and the work of placing the stone is completed by levelling it off with the smallest that can be obtained; taking great care not to jar in the earth from the banks of the drain.

The next operation is to cover the stones with something that will prevent the earth from being precipitated among them; cedar, or pine shavings are preferable to any other substance that I have ever used; but, in their absence, straw, leaves, or turf may be used. Under-drains are frequently destroyed by mice and moles burrowing in them, and digging thro' to the surface, by which the surface water is admitted, and will convey with it, portions of rich mellow earth at each successive fall of rain, ultimately destroying the work. I have never observed a single instance of these burrowing in drains in which I have used the shavings, and they have rarely failed, when I have used straw, to make many perforations in the earth over the stones in the drains.

In Dutchess Co., N. Y. where all my experience has been acquired, and where I have always farmed until about six mon hs since, when I removed my Agricultural Institute to Mount Airy, there is no difficulty in obtaining an abundant supply of shavings from the sash manufactories for the purpose of draining, with no other expense than the cartage. Another advantage in using the shavings instead of straw or other vegetable matter, is, that just that amount is saved to be converted into manure, which every discreet farmer will always have an eye to. In removing the earth to form an under-drain, great care should be taken where the surface soil is fertile, to place it farthest from the drain, that it may be returned last, which will bring it on the surface again. I beg leave to differ with Col. Capron, in one thing he recommends, in his able and highly interesting essay on "the renovation of worn-out lands," where he advises to use sods as a covering material in draining, for as far as my observation has extended, the turf or sods when decomposed will form a more fertile soil than a virgin substrata. The most successful mode of returning the earth into under drains, that I have ever tried, is, by the use of the hill-side plow. Great care should always be taken to leave the returned earth considerably higher than that on either side, in order that it may, when it has settled all it will, be still higher, so that the surface water will not collect and run directly over the drain, as this will invariably prove destructive where there is much descent. Where a very large quantity of water is to be conducted by an underdrain, I have constructed them thus, by sinking the drain of a size that would admit of stoning or walling it up on either side a sufficient height to give abundant room for the passage of the water; then pave the bottom with boulders and cover it by placing large flat stones from wall to wall over the entire drain, completing it by plowing in the earth. But where the quantity of water is so great as to make it necessary to construct an open drain, it should be constructed by successive plowings, commencing on either side, some 5 or 6 rods from where the centre of the ditch is designed to be, and continuing the plowings by turning the furrows from the centre until the desired depth is attained in the centre. After which the ground should be thoroughly harrowed and seeded, and the stones, if there be any, removed.

It will be found that an open drain can be constructed more economically on this plan than any other; and that the work will be permanent, needing no repair.

Where open ditches are constructed by the usual process, that is by picking and shovelling them out,

the banks are left so slightly sloping, that they are constantly caving in, and the condensed current of water is retarded in its course by slides or small avalanches which have lodged in the drain, by which the water will be forcibly thrown against the opposite bank, gorging it, and thus producing an unsightly irregular gulley, the caving banks of which cannot be kept in grass, but will produce all manner of savagery, seeding the adjacent land; and they are on the whole very great nuisances.

All these difficulties, and damages accruing from the common open ditch, are effectually obviated by the wide plowed ditch, as there are no washing of banks or gullying, and the ground may be cultivated, pastured or mown to the water's edge, and the teams with loaded vehicles may cross it anywhere with convenience and safety. As the water rises in a drain of this description, it gradually spreads over its slightly oblique sides or banks without the least danger of injury.

Ditches of this description, and all others, should be made as straight as possible, as it will require less labor to construct them, and they will be more durable and effectual. Pit drainage has been recommended as being of practical utility, but, in my opinion there has been much more said than done in pit draining, for as far as my experience extends, in nine cases out of ten the water will rise, instead of sinking, where a well or shaft is sunk in a basin or bottom to a porous stratum.

In instances where the soil to be drained is such that the digging will be facilitated by the use of the plow, that is, where the ground is so hard as to require picking, we commence by using the side-hill plow, two furrows in depth, using the team in the double yoke, after which we yoke the oxen in the single yokes and attach them to the subsoil plow, and with it, plow to the entire depth, shovelling out the earth mellowed at every repeated plowing. By the use of the plows in sinking the drains, and the truck in filling them, the amount of manual labor required in draining is diminished about 30 per cent.

The average cost of the construction of underdrains which I have made by the above described process, which have generally averaged about 3 feet in depth, 2 feet wide at the surface, and 16 inches wide at the bottom, where they have been plowed, and from six to nine inches where they have been picked, has been about 31 cents per rod, for digging and filling; that is, where stones have been used, that were obtained of a proper size, without breaking.

The draining tiles which I have used, were manufactured near Albany, N. Y., they cost me delivered about $8.00 per hundred, or about 50 cents per rod.

October 2, 1848.

We copy the following notice of our journal from the Denton (Caroline county,) Journal:

THE AMERICAN FARMER.—The April No. of this journal is before us. We have examined its contents carefully. The American Farmer has ever commanded our admiration for the variety of its information, for its *practical* mode of treating all agricultural questions, and for the excellent judgment which its various articles display. The present number abounds with the usual quantum of useful information. No farmer should, under any circumstances be without this excellent agricultural manual. A short time ago we heard a farmer say he had saved about $150 last year by managing his farm according to the advice of the Farmer.

WORK FOR MAY.

The time is at hand for *action*, and, therefore, we shall proceed at once to state what should be immediately attended to

ON THE FARM.

Corn Planting.—The time has now arrived when there can be no longer any doubt that the corn should be in the ground; so, therefore, let those who have not got their crop planted, push ahead and get through with this essential part of their labors; for even a few days' delay, at this season of the year, may operate most disadvantageously, and, indeed, endanger the ripening of their crop, should we have early frosts in autumn. To provide against which occurrence, should be the leading motive of every corn planter: and we would here impress this truth upon all—the great security against autumnal frosts is early planting. For the manner of culture, we refer to our remarks of last month.

Potatoes.—As *early planting* seems the greatest security against the disease which has for so many years destroyed this excellent root, we would enjoin upon all to lose no time in getting in this crop, and to be sure to give it plenty of manure, in order that the tubers may be well fed, and thereby enabled to swell into good size—to be as sure to keep the vines clean from weeds and grass, in order that what manure may be given them shall be exclusively appropriated to the encouragement of the growth of the roots, and that free circulation of the sun and air be ensured to the vines. The plan we laid down last month, for their culture, is the one we successfully pursued ourself, and, as experience is a safe school, we have no hesitancy in recommendiag it to others.

Pumpkins.—Get in your pumpkins as early this month as possible. Make the hills eight feet apart, and be sure to give to each hill a full shovelful of rich manure, incorporating it with the entire surface of the hill. When your pumpkins come up, dust them several mornings in succession with soot or ashes, while the dew is still on the leaves, and be sure to look for and destroy the striped bug, as regularly as that destroying pest may make his appearance. Of the many remedies we have seen recommended, we know of none better than to catch and kill the *vermin*; for, of a certainty, if you do not exterminate them they will play havock with your crop. If a noxious smell could keep them off, dusting the hills with gas-house lime might answer, as that is unpleasant enough in all conscience. We have sometimes used a decoction of *assafœtida*, and dry soot—sprinkling the vines with the first, and dusting them afterwards with the latter—the bugs proved harmless after it, but whether it was the result of the application or not we will not undertake to say, and merely state the fact, leaving it to our readers to draw their own conclusions. These applications it may be said are troublesome; but that should not deter one from incurring trouble, as it is useless to plant a thing, and then leave it to the mercy of its enemies.

Millet.—Those who may not have meadows from which to draw their supplies of hay for their pleasure and work horses, should not omit to put in a few acres of this excellent substitute, between this and the tenth of the next month. When cut at the proper time, which is when the seed at the top of the heads *begin* to turn yellow, millet makes a *hay*, well relished by horses and all kinds of stock, and which is but little, if any inferior to that made from timothy. When grown for hay alone, it should be

thickly seeded,—say from three to four pecks of seed per acre. The soil best adapted to its growth is a deep, fertile loam, dry and sound of bottom, though it will produce well on any rich soil, which may not be wet. As may be presumed, from its rapid growth, any land on which it may be grown should be heavily manured. Cultivated on rich land, well manured, from 3 to 4 tons of good hay may be calculated upon, and as it is one of the best cleansers of the soil known, land appropriated to it will be left in fine condition for a crop of wheat or timothy. If the latter, the seed may be harrowed in so soon as the millet shall be cut, and if rolled, will need no other preparation. The land must be ploughed deep, and thoroughly pulverized, by harrowing and cross-harrowing: the seed must be lightly harrowed in, and the ground then rolled. In curing the hay, after letting the grass lay in swarths 5 or 6 hours, it must be put into cocks, so formed as to turn off the rain, and the drying be thus finished. Thus cured the hay retains its fragrance and continues green.

Professor *Emmons*, who has made very minute *analyses* of the grass and the grain, in all its stages, thus sums up its value:

"The oil though not accurately determined, exists in the seed about 2 per cent."

From the foregoing analysis of millet we find it a valuable vegetable product, possessing in its grain a large per centage of *nutritive matter*. It is rich in nitrogenous products, as albumen and casein, and not at all deficient in fattening and respiratory elements, as oil and starch. Compared with wheat or Indian corn, except in oil, it exceeds both in its power of sustaining life. For bread it will probably be rarely employed, in consequence of the coarseness of its flour and dark color. But for the food of animals it seems that it might be cultivated with profit, as it yields from 65 to 70 bushels of seed to the acre. When fed to cattle it requires grinding, it is, however, safe to feed it to swine in its entire state, though it would undoubtedly be more profitable to grind it even for them, inasmuch as its outer covering or cuticle is highly silicious, as will be seen by consulting the analysis.

The straw of millet, or rather the plant, when intended for hay or fodder by itself, should be cut when it is in blossom, as at this period it is not so coarse as when it stands till ripe. For fodder, it seems to possess about the same value as timothy, though rather less if anything. Its inorganic matter contains more silex and hence it is less nutritious."

Root Crops.—It may not be amiss, as the season is at hand to put in *Carrots*, *Parsnips*, *Mangel Wurtzel* and *Sugar Beets*, to appeal once more to our agricultural brethren in behalf of their *milch cows*. We have known farmers, and not a few of them, who, with a score of cows, did not, through portions of the winter, make butter enough to supply their own tables, and who, consequently, had to feed their cows without receiving a corresponding benefit from their milk. The cause of this is referrible mainly to two causes; *first*, to the fact, that the animals had no shelter to protect them from the cold and sleet of winter, and *secondly*, that their provender was so coarse and innutritious, as not only to deny them the physical ability to secrete milk, but was so scantily doled out to them, as barely to enable them to sustain vitality through the season of snow and freezing, and, therefore, came out each succeeding spring mere skeletons. And surely, it would be unreasonable, unphilosophic, to expect milch cows thus kept to give milk, except in a very limited measure.—Those who desire good fresh nutty butter for their tables, and full supplies of rich milk and cream for their families, through winter and early spring, must provide their cows with succulent food, for no cow, however naturally inclined she may be to yield to the pail, can do so unless she be generously fed—unless she be furnished with the material out of which to form the milk. Straw and other coarse provender may, and does, allay the cravings of hunger, and if given in quantities sufficient, will sustain the animal frame in passable condition, but can contribute but indifferently well to the filling of the udder. He that expects his dairy in winter to be productive, must make up his mind to two preliminaries—that his cows must be provided with clean, warm, well ventilated quarters, and be fed with such food as from its nature is calculated to encourage the secretion of milk. He that bases his calculations otherwise, will be sure to meet with disappointment.

Having thus briefly given our views, we will proceed to point out the roots which should be put in early this month, and direct the manner in which they should be sown and cultivated.

Manure.—The manure for *all root crops* should be well rotted, or in that state of decomposition which prepares it readily to part with its nutritive elements: and as the fibrous roots extend in a very limited degree, when the root is sown in drills—as each kind should be—the application of the manure will be most effective when strewn in the drills, and therefore from seven to ten double horse-cart loads will prove a full dressing for an acre. Those who may not have a supply of stable or barn-yard manure, may find very excellent substitutes in either *ground bones* or *guano*,—ten bushels of the former composted with 20 bushels of ashes, or 100 bushels of rich mould, or 200 lbs. of the latter, and 1 bushel of plaster, will be sufficient for an acre of roots.

Preparation of the ground.—As *Beets*, *Mangel Wurtzel*, *Parsnips* and *Carrots* have all long tap-roots, the ground should be ploughed as deep as the team will allow the plough to penetrate it. Indeed, we should always follow the share plough with a subsoil one, so as to shake and pulverize the soil some 8 inches beneath the depth of the furrow-slice. So soon as ploughed, the harrow should be put on and the ground harrowed until reduced to a perfectly fine tilth, when it should be rolled. For a root crop, too much care cannot well be taken in the *preparation* of the soil, as much of the success of the product depends upon the thoroughness with which it may be done. To make assurance doubly sure in this respect, benefit would be derived from cross ploughing, as every turning over of the earth lets in air and mellows it, and renders it better suited to the growth and expansion of the roots.

Parsnips.—There is a great advantage attending the culture of the parsnip. From its hardiness and capacity to withstand the severest frosts, the crop, when grown, may be permitted to remain in the ground throughout the fall and winter, without the fear of being injured, where the roots will be ready to be drawn in the spring as they may be required to feed the cows. This saves all the expense and trouble of harvesting and stowing away, a consideration of great moment where labor is scarce and dear. Besides this property, the parsnip is a nutritious root, eminently promotive of the secretion of milk by milch cows—it not only increases quantity, but imparts richness to the milk, and a fine nutty flavor to

the butter made from the cream. In the island of Guernsey, so famed for its delicious butter, the chief succulent winter and spring food of the cows, is the parsnip, which fact alone goes conclusively to establish its intrinsic value. But independent of this fact, no one ever yet ate of a well dressed parsnip and enjoyed its rich saccharine flavor, without coming to the conclusion, that among all the edible roots cultivated, it was entitled to be estimated most highly for the purposes for which we now recommend it. As to yield, there is no other root more certain, or more productive.

Soil.—The soil best adapted to the growth of parsnips is a deep fertile loam.

Quantity of Seed per acre.—From 2 to 3 lbs. per acre is the right quantity.

Age of the Seed.—The seed should not be over one year old.

Preparation and quantity of the seed.—Soak the seed in warm water from 24 to 48 hours, drain off the water, and mix the seed with ashes or plaster so as to separate and render them easy of being drilled in.

Mode of Sowing.—If you have a drilling machine—which you should have—drill in the seed in rows 18 or 20 inches apart, about 2 inches deep. If, however, you have no drilling machine—stretch a line and draw drills with the corner of a hoe, north and south, of the breadth and depth named above, put your parsnip seed into a wide mouth bottle half filled with sand, keep the bottle well shaken, and carefully drill the seed from the mouth of the bottle as thinly as you can, cover with the rake and compress the earth with the back of it.

Culture.—When the plants are two or three inches high, work between the rows with a hoe, and thin out the plants so as to stand about 4 inches asunder. In about two weeks give them another stirring with the hoe and relieve the plants of all weeds and grass. In two or three weeks more they should receive a third working, which will generally answer.

Carrots.—The same preparation and culture answers for carrots as recommended for parsnips, with the exception that before the seed is soaked they should be mixed with sand and rubbed between the hands, or they will be difficult to sow. In thinning them out they should be left to stand about 3 inches apart. 2 lb. of seed per acre.

Mangel Wurtzel.—This excellent root delights most in a deep rich loam.

Preparation of the soil.—It would be best to subsoil the ground intended for its culture, though with a good *deep* truthful ploughing, the soil being reduced to fine tilth by repeated harrowing and rolling, (the first harrowing to be in the direction of the furrows) a productive crop may be grown.

Manuring.—This may be done either *broadcast*, or in the *drills*, as may best suit the culturist, the first method always to be preferred, as in that case the entire body of the soil is meliorated by the operation, though an equally prolific yield may be obtained by the latter.

Quantity of Manure.—If applied broadcast it will require from 15 to 20 double-horse cart loads to the acre—if in the drills half the quantity will be sufficient.

Kind of Manure —Manure that is well rotted or about half rotted, answer best. Where a supply of stable or barn-yard manure cannot be had, 300 lbs. of *Guano* will answer in the stead of either of the two other kinds, which should be mixed with a bushel of plaster before being applied.

Mode of making the Drills.—If the manure should be applied broadcast, after it is ploughed in, and the land is harrowed and rolled, lay off the drills 27 inches apart, 2 inches deep, north and south, then drill in the seed as thinly as possible. If manured in the drills, the furrows should be made, say, as above, 27 inches apart, 4 inches deep, spread the manure, return the earth over the manure, then make a drill 2 inches deep, drill in your seed, cover them and compress the earth.

Culture.—When the plants come up and have grown to a few inches height, they must be worked and thinned so as to stand 12 inches apart—each plant will show from 2 to 4 crowns, pinch all off except the strongest one. Three workings will be enough to make the crop.

Should the pasture be thin, towards the middle of August you may pull the leaves and feed your milch cows every 10 days without materially interfering with the growth of the roots, provided you leave the crowns of the plants untouched.

Sugar Beet.—Its management is the same as that of the Mangel Wurtzel.

Quantity of Seed per acre.—*Three pounds* of mangel wurtzel and sugar beet seed is required to plant an acre of ground.

Lucerne.—Any time between this and the 15th of the month will be a good time to drill in an acre of lucerne. For the manner of preparing the ground and management of the grass see our article of last month.

Water Melons, Canteloupes, &c.—Get in all of this kind of fruit as early as possible, in the first week, or ten days of this month, if within your power.

Field Peas and Beans.—Get whatever field *peas* and *beans* you may design planting in by the 10th of the month.

Fruit Trees —If you have not done so before, paint the bodies of your fruit trees as we directed last month.

Out-houses.—If these have not been cleaned out and white-washed this spring, do so at once, not forgetting the fences around the house.

Implements and Tools.—Be sure to have a good supply in quantity and in kind, and keep them always in order.

Draining.—Every spare time you may have, occupy your hands in draining any wet grounds on your farm.

Manure.—Collect and preserve materials for making manure.

Beasts of Labor.—Feed and keep them well.

Milch Cows—See that these receive good treatment and plenty of such food as will enable them to give rich milk.

PLANK ROAD.—In answer to an inquiry as to the cost of making plank roads, the editors of the Prairie Farmer state the cost at about $2,000 per mile—the chief items of cost are the grading and lumber. The manner of constructing it is thus described:

"Our road at present has but one track, eight feet wide; but in the neighborhood of this city two tracks are essential, inasmuch as almost every team loads both ways. The road is made by laying down two stringers, 2 by 4 inches, and covering them with three inch plank, bedded in the earth so as to allow no access of air beneath. The plank rest on the earth—the stringers being used merely to keep them in place. It was formerly customary to spike the plant but this is now discontinued, as increasing the expense, and not adding in any way to its value."

For the American Farmer.

ON THE RIGHTS OF LABOR.

Every intelligent citizen, whether he works on a farm or in a factory, whether he trades by land or sea, knows full well that there is no real incompatibility in the respective interests of different callings, if those interests be rightly understood and fairly treated by the government of his choice. Even between the employer and the hireling as between the producer and consumer, modern views of political economy can suggest no radical uncompromising opposition; but wholesome competition is regarded the life of trade and civilized intercourse. There may be minor considerations which we cannot so easily reconcile with this general truth; as for instance the fact that the misfortunes of some redound to the temporary advantage of others; yet this apparent anomaly may be considered a correction of error in some shape, or at least a dispensation of Providence of which we are not allowed to question the propriety and justice. The great subject then which farmers propose for discussion in a temperate and respectful manner is this—how they shall best advance their own individual welfare, how the welfare of their families, of the State, and of the United States, to all of which they owe allegiance, and to which they are firmly attached by the strongest ties of affection. We disclaim narrow views or sectional prejudices; we feel assured that if there be any one maxim of social importance more transcendant than another it is, that general laws and the most liberal foreign and domestic policy are under all circumstances the best promoters of national happiness and prosperity; and that, as far as individuals are concerned, instead of endeavoring to depress the condition or business of others in order thereby to elevate our own, our surest foundation is that system which supports the common weal on the broad base of equal rights. Farmers then must first be careful in their own case not to confound their undisputed rights with favors which require to be specially urged. What some may claim as rights, others may feel as wrongs. All are entitled to enjoy the benefits of the Federal and State constitutions, which admit of no personal or social distinctions, either in their letter or spirit, but which are intended to enforce a rigid construction of natural justice. Were we desirous to be relieved from certain burdens which should fall upon all classes alike, we should be engaged in an unworthy cause, and our consciences would not acquit us. Who will gainsay the proposition, that privilege however disguised is the bane of society.

Let us suppose that those who pursue the healing art, shall contend in this strain: "Of all occupations none is more important than ours: the health of the community is paramount to every other consideration; we are its guardians. As individuals we ask for protection, as a body we demand rights hitherto denied us by our law-makers. Let our State and Federal legislatures continue recusant at their peril." Well, what do these gentlemen so respectfully solicit? First, perhaps, to be educated at the public expense: they remind us that the army and navy have been provided for. It is in vain we answer that public considerations which will not apply to them have had their due weight in that provision. They state that in some instances their petitions have been heeded, and that the States have generously responded by various grants and immunities. It is in vain we answer that because others do wrong or seek a wrong, that is no reason why we should; or to vary the expression, "two wrongs do not make a right." Lawyers possess ample opportunities of learning their profession in schools dedicated to their particular branch of study—mechanics have their institutes on voluntary principles, religious associations their seminaries supported by private contributions, and why should not the doctors be content with their lot? Fortunately, fellow-farmers, *our profession* does not require more than a general education to prepare the mind for its noble pursuit; were it otherwise how could we ever hope as a class to be respected? If good common schools will do their duty to the rising generation, a few years apprenticeship on well conducted farms will do the rest. Besides, we find that agricultural schools are springing up as the demand for them becomes louder, and the agricultural journals keep pace with this movement. Why then impede the progress of events by taking a false step—why throw discredit upon the cause by a questionable policy? We need not despair of the Republic, if hundreds of young men shall annually gain a thorough knowledge of practical and theoretical husbandry in those establishments which I have mentioned, and thousands subsequently profit by their example.

It is likewise argued that self-protection requires the older States to demand from the Federal government assistance of some kind: that unless something be done to render the Western country less inviting to the youngsters of Maryland, Virginia and South Carolina, whole districts will be depopulated. I cannot subscribe to these opinions, because I have too much faith in the recuperative energies of people who go to work in the proper way, by cultivating their minds and their farms on approved principles. It might be very desirable to have colleges erected at Uncle Sam's expense in every congressional district, or to render them more exclusive, one in every State, with a library well endowed, chemical apparatus, professors, janitors, &c. We might be disposed to accept two or three millions of acres if unconditionally surrendered, or what not: but will Marylanders stoop to accept the boon as a charitable bequest or even as a free will offering?* Will they confess it is "their poverty not their will consents†?" will they demand it as their share of the common spoils, and try to persuade fellow-citizens of the

[*Marylanders would not accept it as a boon, but as a well defined *right*. The public domain which was the property of certain of the old States at the time of the formation of the Constitution was ceded to the General government, in *trust*, for the benefit of *all* the States, subject to the debt incurred by the war of the revolution. When that debt was paid, the lien ceased to rest as a charge upon the public lands, and they became the property, by the reversionary principle in the grant or cession, of all the States.

†It is no confession of "*poverty*," for either an individual or State to claim that which belongs to either the one or the other; but on the contrary, manifests the possession of that independent spirit, which, in the assertion of its rights, entrenches itself with justice, and manfully maintains its ground.—and we would ask, to what better purpose can the States appropriate their portions of the public lands, than to the education of their rural population.—Farmers and planters have too long looked supinely on, while power was being stolen from them, to aggrandize other classes, less entitled than they to the fostering hand of the government.—*Ed. Am. Farmer.*]

North and the South and the West that it is *their interest* also to use the public moneys in this way? will the farmers of once-poverty-stricken Montgomery admit that they require favors? Let the improvements everywhere apparent speak for themselves: *public spirit* is the best guaranty of success; without it, all is vanity.

Our enthusiastic friend, the editor of the Plough, the Loom, and the Anvil in every number reiterates the necessity of bringing those excellent instruments of industry along-side of each other. "Nature," he very properly remarks, "if left alone will place the loom and the anvil near to the plough as naturally as she places the country mill near to the corn-house." Very true, we accordingly find in almost every village of the South a blacksmith's forge, and in very many families a loom for home-spun apparel; but a steam-factory for making fine cottons and broadcloth, or a water-power for driving heavy machinery are not so easily brought just where we could wish them; so "if the mountain won't come to us, why not go to the mountain," as Mahomet recommended. It seems that some of "man's inventions" are absolutely necessary to bring them into juxtaposition, except in those localities where work requiring a large capital and surplus population may be *advantageously* undertaken: to place them elsewhere is to do violence to the laws of trade, and which should be based on the laws of nature, or the aptness of things.

The story runs that king Henry the Fourth of France, in the plenitude of his bounteous disposition, once delivered himself thus,—"he wished every head of a family in his dominions should have a fat hen, with sundry fixings in his pot on feast days." He, however, never attempted to superintend the operation personally or by proxy, but promoted those great national objects which he knew would sooner or later produce that desirable result. Now, I doubt not but that every honest farmer, be he of high or low degree, will co-operate with others to render the population in his neighborhood thrifty and numerous; he will also encourage, as far as in him lies, every branch of industry, but not by improper or unconstitutional means, not by partial legislation, not by over taxing others so as to lighten his own taxes. Here is the great mistake. Because we wish to adopt some feasible and unobjectionable remedy, some sure process of recovery, we are supposed to be lukewarm to the best interests of agriculture, and less capable of promoting the general welfare. The tide is certainly rolling strongly against us just now, and threatens to overwhelm the friends of free trade, unless the West comes to the rescue, and the South be true to herself.

We have a presentiment that capitalists at the North will soon discover, under the operation of fair play, openings for doing a profitable business at the South. With our present tolerably fair tariff of prices, a tariff which is likely to last the longer, the nearer it approaches perfect fairness, cotton may be manufactured more closely the spot where it grew; machinery, which does the headwork of the process, may probably enlist slave hands to convert wool into cloth, or iron ore into bars of the pure metal. Railroads, canals, mining associations, &c. are advocated by the authorities and the public voice, in order to render the South as independent as possible of foreign countries and of the North, or the Southern States themselves of each other; without, however, compromising those tenets of political faith which have been steadfastly maintained and will be maintained as the sheet-anchor of safety, swamps will be drained, and the uplands enriched by a judicious application of manures. Poverty has hitherto compelled slaveholders to rid themselves of property which was unprofitable, but "the good time is coming" when both bond and free will rejoice in a common prosperity, if fanaticism be frowned down effectually and forever. Some well-wishers propose sheep-husbandry, a greater diversity of crops, the raising of cattle, &c.—all in good time, gentlemen of the North; we do not wish to give up your hay and pork, your iron-ware and other sundries at once, although you press us so strongly and disinterestedly to do so, and even call us blockheads in the bargain for not doing so. The fluctuations of English policy are not likely to interfere with the establishment of such branches of manufacture as can maintain themselves under the protection of just laws—but, if they require *unjust laws* for their support, let them die the death of the unrighteous.

Free trade, now likely to become universal among civilized nations, is but a measure of resistance against a great wrong on the part of those who gain their daily bread by the sweat of their brow. It may be decried by master manufacturers, or the proprietors of mining lands, or capitalists everywhere; it may be discountenanced in some Southern cities by leading merchants who can command bank facilities; or even by some of our own profession, large landholders, whose interests may be thought to square with monopolies of every kind; but the laboring class will instinctively right themselves at last.

R. S. W.

Washington County, D. C.

CULTURE OF GRAIN IN ENGLAND AND SCOTLAND.

NECESSITY FOR CHANGE OF SEED.

BALTIMORE, February 8, 1849.

To the Editor of the American Farmer.

SIR:—In my last letter I stated that I would give you an account of the different seeds and farm stocking of cattle, &c., used by the best practical farmers in the North of England and Scotland, with the different systems of raising them—and shall commence with *seeds*, as they are indispensable in keeping a farm in good order. I shall therefore begin with the different kinds of grain.

1st. *Wheat.*—Wheat is the grain upon which all farmers look as the most valuable, and value land according as they think it will bear or produce that grain. In this *genus* there are many species; but I shall class them in two, viz: the *white* and the *red*. The former, in general, is the favorite, though many farmers hold out that the latter is the hardiest, not being so liable to be infected with smut or rust as the former. The ground is prepared in the same manner for either kind, and they are sown at the same season of the year—commencing in the month of August, and at all times until the month of March, whenever the weather will admit, and the land so dry that the harrows will drag the earth, so that the prints of the horses' feet will be filled up. As I mentioned formerly, the land for winter wheat is never harrowed fine or rolled before winter. The wheat that is sown in January, February, and beginning of March, is called Spring wheat, on account of the time of its being sown, though, very often, it is the very same kind as has been sown all the season. It is always a week or two later in ripening than that sown earlier, but if this produce is kept

and sown progressively for three years it will ripen almost as early as the produce of the other.

All practical farmers take particular care never to sow the same produce more than four years at the most; for this purpose they get a few bushels of fresh seed. This is sown in order that its produce may be sufficient to supply the farm with seed the next season, and the produce of each season for the two following seasons after. Thus, the four sowings finish this seed, and then another change is made. This change by the farmer buying or changing a few bushels with a brother farmer who farms land at some distance, (say 50 miles) of a very different quality, and also of climate, if possible—thus, if the farmer who wants to get a change of seed has a farm of a sandy loam and low or level ground, he tries to get seed from a strong clay soil and of an elevated situation, and *vice versa*, on all exchanges. In that part of the British Islands, every scheme had been tried to prevent smut in wheat, but all had failed to a certain extent;—and as I see that this disease is treated of, in your valuable work, with cures for the same, but not having perceived the one that had been found to be the best in that quarter taken notice of, I shall now state it to you. It is strong chamber-ley. In order that this may have proper effect, it ought to be collected weeks before it is intended to be used, and put in a large cask or hogshead, with its end out, in the barn or out-house. When the wheat is to be sown, on the day before, or same morning, put a few buckets full of this chamber-ley into a tub or such other vessel—then put a bushel or two of the wheat intended to be sown into the chamber-ley—stir it about, so that all the light grains, &c. will swim on the top. Skim these off, and when this is done, take the wheat out of the tub with a sieve, in order that the liquid may not be lost—lay the wheat on the floor, at the same time air slacked lime should be sifted upon it, turning the wheat repeatedly and sifting the lime upon it, until the wheat is completely dry, which is easily known; for when it is so, every grain is by itself in a hard coat of lime, which will remain upon it until vegetation takes place. I have kept wheat six weeks after it was treated in the above manner, before it was sown, and no difference could be seen in the spring between this and what was sown the day it was limed, &c.

In regard to the *rust*, no preventive can be found against it, as it depends altogether on the weather. In warm and foggy weather it will attack the straw after it has been cut, therefore when it takes place when the grain is in the milky state nothing can save it.

I shall take no notice of the quantity of seed sown or the produce upon an acre here or there, as both depend upon the quality of land. One thing, however, I shall say—that I prefer the system of cutting their wheat as soon as it is completely out of the milky state, and let it harden in the sheaf. It is fully known that all kinds of grain ripen from the top downwards—therefore, as soon as the straw has got into a yellow hue or golden color, only a few inches from the head it ought to be cut, for several reasons,—1st, the grain will measure and weigh more per bushel than if it had remained uncut until the straw was ripe to the bottom—2d, the flour will be whiter, and of a much better quality, than if allowed to remain standing until shrivelled up by the sun—3d, there will not be the one-third lost in handling, which must be the case when left standing—and 4th, as the *straw* when cut before it is dried up, has all its juice standing in it, it makes excellent provender for the horses in the depth of winter, and where it is not used in this manner, but turned into manure, is much richer than if the straw had been dead ripe.

Rye is not much sown in Scotland, but where it is, it is treated in the same manner as wheat, except in pickling for smut.

Barley is sown to a great extent. There are two particular species which are sown in these quarters, viz: *Barley* and *Bear*. The former is flat with two rows—some of the kinds are bald, that is, without spears to the grain—but the kind mostly used, is that with the spears to the grain—the other has four or five rows of grain on the head, with spears—the former is sown in all low and rich lands—the latter on poor lands, and in elevated situations. This grain is made into malt for Brewers and Distillers—it is also used by the peasants in the United Kingdom for bread—and likewise manufactured, in order that soup may be made of it. This grain is always sown late in the spring—it requires rich land and well wrought to insure a good crop: when these are joined it invariably pays the farmer better than wheat does. One advantage it has over wheat, is, that it is not so liable to disease, and it may be allowed to stand until the straw is dead ripe, it will not shatter out—and the straw is excellent food for cattle in winter. I may also observe, that the grain of barley does not dry up when allowed to stand until perfectly ripe as does wheat, but if cut green, it will shrivel very much.

Oats are of different species. The two most commonly sown are the *Potato* and *Poland*, yet in many places or farms in elevated sections of the country, the others, such as the *Common*, *Tartarian*, &c. are sown; these last are preferred for feeding horses used on the road in stages and other carriages, as well as for common hack horses, hunting and racers, because their being less meal in them than in the two first mentioned species, do not purge these horses so much when put to severe exercise, as do the others; the *Potato* kind are always used for making into meal for bread and hasty pudding or porridge in the North of England, Scotland and Ireland, on account of their containing more meal than any other. I may also add, that when *oats*, of whatever species, are repeatedly sown on the same farm they degenerate into the common kind. It is therefore as necessary to change them as it is to change wheat. In 1837, I got two bushels of potato oats sent from the Banks of the Tweed. I expected to have the kind in a complete state. Alas! to my vexation, in the fifth year they had become completely degenerated. I also got some very fine looking potato oats from the Alleghany mountains, and in three years they were also gone. It was in the low lands of Virginia, where these oats were sown,—therefore, I feel convinced that although the potato oat will keep in prime condition in a very elevated situation, they will soon run back if repeatedly sown in a contrary or warm climate. I may add, in conclusion, that every farmer will find his advantage in repeatedly changing the seeds of the different kinds of grain he sows upon his farm no matter of what kind.

If you think it would be of any service to your publication, I shall next month give you a few lines upon the seeds used for green crops in that quarter of the United Kingdom, and the general system of cultivating them, before I say anything respecting the stocking raised on the farms.

I am, dear sir,

Yours sincerely,

THOM. JOHNSON.

TRAPPE, Talbot County, Md., February 9th, 1849.

To the Editor of the American Farmer.

DEAR SIR: Having just finished the perusal of the February No. of your valuable journal, from "cover to cover," I very naturally feel desirous of returning to you my heartfelt thanks for the enjoyment and instruction therein afforded me.

The able address of GEN. TENCH TILGHMAN is "the feature" of the last No. of the invaluable "Farmer." No one can read the strong practical address of the General without believing with the talented author, that it is much better to cultivate *well* a small farm than to waste one's labor and means upon a large place—a fact that I have understood that Gen. Tilghman has proven by his own experience, having (if I mistake not) divided his large plantation into three distinct farms, and being, at this time, actually in receipt, yearly, off of one-third the original place, as much as the whole estate formerly yielded, thus making the place support three families instead of one, besides, no doubt, affording to the present farmers a considerable annual surplus. This fact proves that Gen. T.'s talents have made him a benefactor; for "if honor is due to him who makes two blades of grass grow on the spot that formerly produced but one," how much more honor is in reserve for HIM who has made the same spot support "three families" when it before supported but one?

There are many other articles in the number alluded to that deserve particular notice; but, inasmuch as they speak for themselves, it is unnecessary for me to here refer to them, as my object in writing is upon quite a different subject, which I have for some time desired to bring, in a proper manner, before yourself and readers.

You are well aware that, notwithstanding the enlightened views of the population of this shore, that certain prejudices have long existed against "Manual Labor," particularly that labor which is so necessary in carrying on the farm. This prejudice (for a mere prejudice it is) is one of the great drawbacks that still exist here, even amidst the great improvements that, for the last few years, have so materially changed the face of this lovely section of country. Now, how is this to be remedied, and a healthy reaction be made to take place? Must we not commence at the very root of the evil? And are there not patriotic men hereabout who will assist us to eradicate this deplorable evil—men who believe that labor is of itself honorable, *and the labor of the farmer most honorable of all.* Now, my dear sir, how shall we commence the work of reform.

Will not the establishment of an "Agricultural School," upon one of the desirable farms of this county—a school at which a light and profitable "manual labor" shall be indiscriminately required from all the students—tend, in a great measure, to correct the evil, and, at the same time, by teaching the usual higher branches of a first class education, together with "Agricultural Chemistry," the "practical management of the farm," "Vegetable Physiology," "Geology," &c. &c., furnish for the farmers of the rising generation scientific men, acquainted with farming in all its details? Would not the landholder, when he has land to rent, prefer to rent to *such* men? Aye! if he has it to *sell*, will he not rather *sell* it to the man whose SCIENTIFIC ACQUIREMENTS are such as to do honor to *a most honorable and profitable profession.*

At such a school, the sons of the rich and the poor man could meet upon equal terms. All are preparing to make themselves scientific and practical farmers—the first to be accomplished by study, and the latter by WORK. And another *consideration* for the poor man would be, that the WORK performed by his sons, besides gaining for them practical knowledge, to be gained by no other means, it would go towards lessening the expenses of their education.

Schools, similar to the one I have suggested above, have already been successfully established in different parts of the country. As yet I have not been enabled to examine in detail the different plans on which they depend for the support of the public. Hereafter, I shall make myself familiar with all of the most successful, provided this communication meets with encouragement.

That there are several high-minded, public-spirited gentlemen in this neighborhood who would highly approve of the above scheme, I have not a doubt; and it is by such generous aid we must look to for the establishment in our midst of such a convenience to the rich man, and blessing to the poor one. It would be highly gratifying to the writer if you would give the above suggestion the benefit of your powerful pen. In your MARCH No. I hope to see that you are clearly converted to the plan, until which time I dismiss the subject.

"Honor to whom honor is due," is quite a just as well as an equally common quotation. And, in looking around me at the great improvement of this neighborhood, I know of no one who is entitled more justly to honor and esteem than Mr. ———, an independent and excellent farmer of this county, a son of one of the old families of the county. Mr. ——— is residing in a district called BOLINGBROKE, the land of which district has been generally bought up by him; and, owing to his great liberality to tenants, in encouraging them to spread manure, the land, which was formerly remarkably poor, is fast getting enriched, and the population in a proportionable manner acquiring "the goods of this world." Mr. ——— has also, very recently, as I am informed, purchased a STEAM BOAT, in company with one or two other gentlemen, which they intend to run as a passenger and market boat, between the different landings on the Choptank river, and the cities of Baltimore and Philadelphia, thus, as the accomplished and talented Mr. Skinner says, in effect bringing together "The Plough, the Loom and the Anvil."

This last enterprise will be of incalculable advantage to the farmers of the Choptank and its vicinity, as it will furnish, at once, a market for the more profitable and perishable products of their farms. I sincerely hope that the enterprizing owners may more than realize all their expectations. Mr. ———'s enterprize knows no bounds. Besides being largely engaged in agriculture, boat building, &c., thus furnishing work for the "bone and sinew," he has, on his homestead, an excellent "steam saw mill," in full operation.

To how much more advantage does the above gentleman live, both to himself and his neighbors, than if he hoarded up his means in the safes of a bank, or invested it in poor lands, which he permitted to remain so. Yours, E. F. R.

Fragrant Odor for Sick Rooms.—A few drops of oil of sandal-wood, which though not in general use, may be easily obtained, when dropped on a hot shovel, will diffuse a most agreeable balsamic perfume throughout the atmosphere of sick-rooms, &c.

CULTIVATION OF THE SWEET POTATO.

New Town, March 7th, 1849.

To the Editor of the American Farmer.

Mr. Editor,—The mode of cultivating the Sweet Potato, as practised in the districts where they are grown to the greatest perfection, and to profit, I have never seen published, and as I have recently learned from a very intelligent gentleman of the Eastern Shore of Virginia, their system of cultivating the potato, I have no doubt but many of your readers would like to know the secret of their success, with this favorite root, I therefore give you the information. The sweet potato is grown upon all soils sufficiently dry, but a clay and sandy loam, with a clay subsoil, is preferred. In the fall of the year and during the winter season, the leaves and vegetable mould of the woods, is carted on the field, sufficiently thick to cover the field, from 2 to 3 inches with woods litter. In the spring it is spread and ploughed in, and those who have lime, give the land a slight dressing, but this is not generally done.—The land is ploughed very shallow, from 2½ to 3 inches deep, only deep enough to form the hill mixed with the woods litter. It is found from many years experience, that the potato yields more marketable potatoes when the ground is hard under the hill. If the land is pulverized to a great depth, the potato root penetrates the earth, and forms a long slim potato unfit for the market, whereas, if the ground is hard under the hill, the root grows to the hard ground, and there stops; the potato then grows in circumference, which gives it sufficient size to make it sell with the larger potatoes. The potatoes are grown from the sprouts, being more profitable to the producer and better for the table; they are more regular in shape and size, than the potato grown from the slip or seed potato. From the 15th of March to the 15th of April, depending on the season and latitude, is the proper time to prepare the hot bed, for sprouting the seed. The hot bed is prepared either with fresh stable manure mixed with straw, or with straw or hay alone, by placing the hot bed in some warm situation, making it from 2 to 3 feet deep with manure or straw, packing it close and moistening it with water, to produce a slow fermentation, it is then covered with rich earth from 2 to 3 inches, the potato seed is regularly placed on the bed, so as not to touch, and is then covered with rich earth to the depth of 2 inches. If the weather is cold, bushes either pine or cedar are procured, to cover the bed, taking them off in favorable weather. When the sprouts are from 4 to 5 inches long, enough of the field is ploughed or harrowed the second time, to plant all sprouts of suitable size. It is thrown into ridges about 2½ feet apart and crossed the same distance with the plough, making about 6900 hills to the acre; the hoe follows the plough, making a small hill; a hole is made in each hill with the corner of the hoe, to prepare for planting. If the weather is very dry, water is poured into the hill, and one sprout is put in each hill, the hill not much larger than a half bushel measure. As the sprouts appear of sufficient size, the hills are made to receive them, and the planting continues until the field is planted. It is more favorable if the season is too dry than too wet, both for setting out the sprout and the growth of the potato; the most favorable time for setting out the sprouts is just before or after a shower of rain; in moderately dry seasons some dip the sprout in water mixed with earth, so that a portion of wet earth adheres to the sprout; in very dry seasons the sprout or plant must be watered until it begins to grow or take root. The after culture of the potato consists in keeping them free from grass and weeds, and hilling up before the vines run over the hill.

Respectfully,
J. S. STEVENSON.

The Editor of the American Farmer has been furnished with the following, with the assurance that they have been found effectual:

CURE FOR BONE SPAVIN.—Take oil of amber, oil of spike, and spirits of turpentine, equal parts, say 4 ounces; warm them on some warm ashes with no blaze, and apply them as warm as you can to the spavin by pouring it on and rubbing in well with the ball of your thumb (first shave the hair off of the spavin); this must be repeated twice a day for two days, when, if well rubbed, will become a running sore; wet a spunge with the substance, and apply it twice a day for 3 days, then stop for three days, and if the spavin has not disappeared, repeat the course three days longer, let the sore heal, wash it with plantain leaf scalded, and suds from castile soap; as soon as the sore is closed commence rubbing with lard or rank butter, and the spavin will disappear and the hair will grow in the same colour.

CURE FOR DISTEMPER IN DOGS.—Take as much Turpoth mineral as will lay on a five penny bit, make it in a pill or two, with butter, and give the dog; it will cause him to vomit, and cure him—this I have done often, and never knew it to fail.

Respectfully, AMOS GORE.

CULTURE OF TEA IN THE UNITED STATES.—An attempt is about to be made on an extensive scale to raise, or to grow, tea in this country. For this purpose an importation of tea plants arrived a few days since in this city. They are about five hundred in number, and they are generally from one to two feet in height. The gentleman who is engaged in this enterprise is Mr. Junius Smith, a native of the State of Connecticut, but a resident for many years in London, where he was largely engaged in trade and commerce. He was one of the early and efficient advocates of the practicability of navigating the ocean by steam, and did much in England towards forwarding that enterprise.

Having turned his attention to the subject of raising and curing tea, and the nature of climate and soil adapted to that plant, he thinks there is no reason why it should not be produced in this country, not only for home consumption, but exportation. Mr. Smith left here three or four months ago, and went to London to increase his information on the subject, and had all the facilities granted him which London could afford.—And, having completed his store of knowledge on the subject, he has now returned here with five hundred tea plants to attempt to carry out his enterprise. For this purpose he will, in a few days or weeks go south, perhaps to some part of Georgia or Alabama, having ascertained that soil and climate in that section of the country are precisely what the plant requires. He thinks there is no reason why tea should not become a great staple growth of our country—says it may be raised for six cents a pound. He will keep the plants he now has for seed plants three or four years, in order to spread the cultivation rapidly, and after that keep them for the crop. It is an important enterprise. How he will succeed time must determine.—*National Intelligencer.*

THE AMERICAN FARMER.

BALTIMORE: MAY 1, 1849.

TERMS OF THE AMERICAN FARMER.

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At the *State Agricultural Society Rooms*, No. 128 Baltimore st. over the "American Office," 5th door from North-st.

Maryland State Agricultural Society.

The Quarterly Meeting of the Board of Managers, comprising all the officers of the Society, will be held on the FIRST WEDNESDAY IN MAY, at 10 o'clock, A. M. at the Society's Hall, 128 Baltimore-st. As business of much importance will be brought before the meeting, a general attendance is desired. The members of the Society, who can make it convenient, are also invited to attend.

By Order, SAML. SANDS, Rec. Sec.

THE MEETING OF THE STATE SOCIETY.—The meeting of the Board of Managers of the Maryland State Agricultural Society will be held at the Hall of the Society on the 2d inst. (*being the first Wednesday*). As this meeting will be an important one, we would respectfully urge upon all the officers of the society to be present on the occasion. The members generally, who can make it convenient to attend, are also invited.

The reports of several committees will be made, and the arrangements for the next Exhibition of the Society will be matured at this meeting, and various subjects of deep interest to the agriculturists of our State considered.

Draining.—The essay on Draining, which will be found in our journal for this month, is from the pen of professor *Wilkinson*, of the Mount Airy Agricultural College, near Germantown, Pa. The intelligent manner in which he treats the subject will command attention.

It will be seen that he promises "a full description" of the method of "constructing Cement Pipes," the which we shall be happy to receive and publish.

The essay, on the same subject by the Hon. *Willoughby Newton*, is able and practical—treated so as to be understood by all—we need not commend it to our readers, as it has that about it that will secure its perusal.

These essays are upon a subject of the utmost importance to the agricultural community—and we are gratified at being able to present such valuable papers to our readers. They are worth the price of many years subscription of our journal to every farmer.

The State Chemist.—Two papers from Dr. Higgins, the State Agricultural Chemist, will be found in the present No.; one containing an Analysis of the "Agricultural Salts," and of Guano—the other, the first part of the "*Glossary*," promised in our last—both of which will attract the attention of our readers.

To a Correspondent.—Our friend T. Johnson's communications are always interesting and instructive—and we leave him to pursue his own taste in the selection of his subjects, as well as in the priority he may give the one over the other,

☞We are again compelled to defer the promised paper from Mr. E. Stabler, on the erection of Lime Kilns. It will not spoil by keeping.

Washington County.—We received after our pages were filled, a note from a correspondent in this county, in which he speaks in high terms of the address of our friend and fellow-townsman, Dr. *Wharton*, delivered at the late meeting of the Agricultural Society, at Hagerstown. We extremely regret our inability to publish it this month.

"*A Subscriber in Va.*" on the cultivation of Corn for subsoiling, is received.

Mimosa Seed.—We are indebted to Mrs. Dr. Thomas for an additional supply of the seed of the beautiful Mimosa, for distribution.

Glass Milk Pans.—Messrs. Edwards & Stevenson, Merchants of this city, have placed in the State Agricultural Society's Hall, a pair of Glass Milk Pans, made by Deming Jarvis, of Boston, and are believed to be the first manufactured in this country—they are 14 inches in diameter, and the glass about ¼ of an inch thick. We have seen glass milk pans highly highly spoken of, as being used in the dairies on the Continent of Europe—and we should suppose they would be found admirably suited for the purpose. We would direct the attention of dairymen and others to them.

Seed Corn.—A sample of seed corn, raised by Mr. Wm. B. Dobbin, of Elk Ridge Landing, can be seen at the Society's Hall—it is a yellow corn, and we think among the finest specimens we have seen. Samples of Mexican (white) Corn, and of the Oregon, can also be examined at the Hall.

Rock Salt.—Frequent inquiries have been made for this article, which is highly prized by dairymen and stock raisers—a sample is left at the Hall, and we learn from Capt. Graham, of this city, that an importation will be made of some of it in a few weeks—it is sold at $12 per ton.

Another Fertilizer.—In our advertising pages will be found the advertisement of Messrs. *Kettlewell & Davison*, offering to the farmers, their "Agricultural Renovator." The spirit of improvement which is abroad among the farmers, is attracting the attention of men of science and of capital, to supply the wants thus necessarily created for the improvement of the soil, and we hope that all who may be found aiding in so desirable an object, may meet that reward which their labors deserve.

Pub. Doc.—We acknowledge the receipt of a copy of the President's Message, and accompanying documents, presented to Congress at the opening of the late session, from the Hon. Mr. Pearce. Mr. P. will please accept our thanks.

Agricultural Club of 3d Election District of Kent Co. Md.—We have received a copy of an address delivered on the 17th February before this society, by *Albert E. Basford*, esq. and by the unanimous vote of the club requested for publication in the American Farmer. A prior occupation of our pages precludes its insertion this month, but we will give place to it in our next.

Clover and Plaster of Paris.—A valuable paper from the pen of our friend "*Patuxent Planter*," on the subject of Clover and the use of Plaster, recently appeared in the Marlboro' Gazette, which we shall take much pleasure in transferring to our pages in the June No. Although it will not have appeared originally in our journal, yet it will do well to grace the last number of this volume of our journal, the previous ones of which have contained so many valuable essays.

The Wheat Crop.—From all directions, where wheat is grown in our country, we learn that the wheat crop has stood up strong against the frosts of winter, and bids fair to yield well. Of this latter anticipated result, it is too soon to form opinions, as the casualties to which the wheat crop is liable, too often blight the best grounded prospects.

A Valuable Farm.—We would refer to the advertisement of Col. Cary, on another page, in which he offers his valuable Farm for sale. The situation is in one of the most fertile districts of Baltimore county, and is well worthy the attention of any person desirous of obtaining a landed estate in the vicinity of Baltimore.

☞The *President of the U. S.* has promised to attend the next Fair of the State Society of N. Y., if possible. When at the Relay House, near this city, on his way to Washington, he was invited to visit Baltimore, but declined, for want of time; we learn, however, that he voluntarily promised to do so at the Cattle Show to be held here in the Fall.

MONTGOMERY CO.—We have in type several admirable reports of Committees of the County Society, but they are crowded out—one of them from Mr. *Farquhar*, on the statistics of Montgomery, is a very valuable and interesting document. We have also received a Report to the same Society, on the subject of County Roads, drawn up by *A. B. Davis*, Esq., which, by the request of the Society, we intend transferring to our pages, at as early a day as possible. It is a subject which will be found of importance to other counties of the State beside that for which it was immediately intended; and the name of the author of it is a guaranty that it is ably written.

We have also received the address of the venerable Dr. *Wm. Brewer*, President of the Agricultural Society of Medley's District, at the annual meeting. The Dr. may be considered one of the pioneers in the good work of improvement in his county; and the perseverance manifested by him and his colleagues, in sustaining the Society in his district, is worthy of imitation in other sections of the State. We regret, that, short as is the address, the prior occupation of our pages prevents us publishing it this month. It shall appear in our next.

North American Pomological Convention.—We have received a copy of a circular from the committee appointed at a meeting of Pomologists, held at Buffalo, N. Y., last September, announcing the next meeting to take place on Friday, the 14th September next, at the city of Syracuse, N. Y., the day succeeding the Show of the N. Y. State Agricultural Society, (which is to be held on the 11th, 12th and 13th of Sept. also at Syracuse,—on which occasion, the celebrated Professor Jas. F. W. Johnston, of Durham, Eng., is to deliver the annual address.)

Pomological, Horticultural, Agricultural, and kindred Societies, or Associations, throughout this Continent, are requested to send delegates to the Convention; and gentlemen resident in vicinities where no societies exist, who take an interest in the advancement of Pomological science are also invited to attend.

Any fruits that may be sent can be directed to the care of P. N. RUST, Esq., Syracuse, N. Y.

Guano.—The Rockville (Md.) Journal, says, that should the price of guano fall to $40 per ton, it is probable that 500 tons will be used in that county next fall.

Sheep.—The flock of sheep of J. B. Spencer, esq. near Centreville, was attacked a few weeks ago, by a pack of dogs, and 40 head, mostly lambs, were killed or crippled. This is a matter of frequent occurrence, in our State, and it is a nuisance that must be abated.

SNOW IN APRIL.—We had a snow storm on the 17th and 18th of April, accompanied by cold rain and wind. We have made diligent enquiry in regard to the effects of the frost on the fruit, and the opinion is almost universal that the peaches, apricots and cherries, were nearly all destroyed. In some locations, the apples are also affected—as was the young clover. The storm raged in the South also, and fears are entertained that the cotton and rice crops were very seriously injured. The ice in some situations was several inches thick. In Georgia, the wheat is said to be very seriou-ly injured; vegetation of almost every description felt the nippings of the frost.

P. S.—Since the above was written, we have received a communication upon the subject from Mr. S. Feast, which will be found on another page.

SPREADING LIME—LIME SPREADERS.—Now that the use of lime has become so general, it is an object of importance that some machine calculated to adjust and equalize the distribution of quantities, and protect the hands engaged in spreading from the inconvenience of inhaling the dust of the lime, should be adopted. So far as our experience goes, Smith's Lime Spreader was the best we had ever seen. It spread the lime with great accuracy, and incommoded the spreaders less than by any other plan we had ever seen practiced, and was so constructed as to spread, if we recollect rightly, three given quantities per acre. Why, we know not, it has got into disuse, for every one who used it, that we ever heard speak of it, spoke in approving terms of it. We witnessed it at work once ourself, at the Orange farm, near this city, where its performance was admired by every one present. The lime was spread with great uniformity and without annoyance to the horses or driver.

A FERTILIZER.—In Ure's Dictionary (supplement) the following is given as a very fertilizing compost, applicable to a great variety of soils:

Sulphate of Ammonia, or sulphuric acid, (oil of vitriol)	- - - -	10 per ct.	30 lbs.
Bone Dust,	- - - -	20 "	60
Gypsum, (plaster)	- -	20 "	60
Barn yard manure, or rich earth, (say)	- - -		150
This will make a valuable fertilizer, of			300 lbs.

COMPLIMENTARY.—We take the liberty of making the following extracts from a letter from Richmond, Va., enclosing us the names of new subscribers to our Farmer. We have before received from the same source, a number of new subscribers, and we cannot resist the temptation of publishing this extract, and thus publicly rendering our thanks to Mr. Peyton, for his exertions in our behalf. During the past month, new subscriptions have been daily pouring in upon us from the Old Dominion, and we flatter ourselves from the indications we have recently received, that our journal will receive an immense increase to its list from that State for the volume commencing in July. We have no doubt that many of our friends in Virginia think with Mr. Peyton, that in advancing our intesests in the manner indicated, they are at the same time advancing the interests of the public, and we hope they will take some little pains to follow the laudable example thus set them:

"I shall do all I can to advance your list, being satisfied in so doing I advance the public, as well as your private interest, both of which I have at heart, I beg to assure you.

"I am a farmer as well as merchant, and take the deepest interest in agriculture, my farm is 8 miles above the city, on James river, has been greatly abused and impoverished for years and years past, but with lime, guano, and other manures, am endeavoring to put another face on it, and so far, with great promise of success—I ascribe much of it to your valuable paper. Very respectfully,

BERNARD PEYTON."

VIRGINIA.—We continue to receive large additions to our list of subscribers from Virginia; and the prospect is very flattering for a very heavy increase for our next volume, from the intimations we have received from various quarters. The following extract from a gentleman of Petersburg, who has obtained a number of subscribers to our journal, is very gratifying, on account of the improvement which is being manifested in the region of the writer, as well as the estimation in which our journal is held by our patrons there:

"I wish I could send you a larger list of subscribers, but have determined, whenever one offers, to send it without waiting for an additional number, as each one will then act as an agent. I am pleased to believe that your journal is working a most salutary influence on our agricultural interests. Our people are waking up to the improvement of the soil. The surrounding country is well supplied with marl, of the best quality; and our people are beginning to appreciate it. I believe, in time, this portion of Virginia is destined to be one of the finest in the State; and the charters granted by our last Legislature, for certain rail-roads, will make Petersburg one of the most thriving towns which we have. Your paper is very highly valued by those who have taken it, and I have no doubt the circulation will increase. W. J. DUPUY."

Another gentleman in Virginia, who has been the means of obtaining a number of subscribers to the Farmer, writes us, in remitting for several additional copies:

"Your journal is growing in popularity in our community—is much enquired after—and when an acquaintance subscribes, he wishes it sent for *immediately*. Every new subscriber urges others to take it, and in that way the circulation will be greatly and, I hope, rapidly increased."

ANALYSIS OF CHAPPELL'S FERTILIZER, AND GUANO.

By Dr. HIGGINS, State Agricultural Chemist.

To the Editor of the American Farmer.

DEAR SIR:—In reply to numerous enquiries made of me as to the comparative value of "Chappell's Fertilizer, or Agricultural Salts," and Guano, I send you for publication the following analysis of it, together with several specimens of Guano:

Chappell's Fertilizer or Agricultural Salts.

Specimens furnished by Mr. Thomas Hopkins, near Wye Mills, Talbot county, Md.

One hundred parts contains of

Ammonia,	1.	per cent.
Sulphate of Soda,	14.	"
Phosphate of Lime,	16.	"
Phosphate of Magnesia,	07.	"
Water and Organic Matter,	35.	"
Sand,	27.	"
Potash, no appreciable quantity,	00.	"

In the above analysis, I discarded the fractions, as the constituents of a substance not compounded by *exact* weight are constantly liable to variation as to quantity, and we at best can only arrive at its average composition. In the above, I have given the Fertilizer the advantage of the full per cent. in the valuable constituents, viz: the Ammonia and the Phosphates, where any fraction existed, so it is as favorable, or at least a fair analysis.

The *almost* entire value of Chappell's Fertilizer, like Guano, depends on its ammonia forming one, and the phosphates forming twenty-three per cent. of its composition.

The ammonia is valuable, as in this form alone (as far as we know) can plants be furnished with nitrogen, and the phosphates are necessary to form the grain of wheat, corn, &c.

The sulphate of soda would be more than supplied by its equivalent of common salt (muriate of soda,) and gypsum, (sulphate of lime,) as it is of no moment whether the sulphuric acid in the sulphate of soda be associated with soda or any other base, and the remark contained in the latter part of the foregoing sentence is equally true of the phosphoric acid in the phosphates of lime and magnesia. The ammonia is not only that which already exists, but all which *ever can be possibly* formed by the elements composing the fertilizer.

The organic matter is of no value.

Guano.

No. 1, contained of

Ammonia,	4.	per cent.
Phosphates,	36.	"
Silica, (sand)	7.	"
Water and organic matter,	50.	"

No. 2, A *very inferior* article sold for (I think) $20,00 per ton in 1848, contained of

Ammonia, three-tenths of one per cent.	.3	
Phosphates,	40.0	per cent.
Silica, (sand)	26.0	"
Water and organic matter,	33.0	"

No. 3, contained of

Ammonia,	7.	per cent.
Phosphates, and other ingredients were not estimated.		

No. 4, contained of

Ammonia,	5.	per cent.
Phosphates,	62.	"
Organic matter and water,	26.	"
Silica, (Sand)	05	"

No. 5, contained of

Ammonia,	9.	"
Phosphates,	28.	"
Sand,	26.	"
Water and organic matter,	36.	"

The average of five specimens of Guano, contained of

Ammonia, 5.06, more than five per cent. of ammonia Chappel's Fertilizer, contains of ammonia 1. per ct.

The average of four specimens of Guano, contained of the

Phosphates, 41¼ per cent.

Chappel's Fertilizer contains of the

Phosphates, 23 per cent.

N. B.—The above analyses of Guano were made in reference to their agricultural value, which depends almost exclusively on the ammonia and phosphates, and especial attention was given to these substances. The quantity of ammonia comprehends that already formed, and all which *can be* produced by the materials existing in it.

The great difference in the value of the different specimens of guano is worthy of especial notice, a difference which can only be detected by Chemical Analysis; no other test, whether by sight, touch or *smell* can make even an approximation to its value. The true value of guano, depending as it does on its ammonia and phosphates, its price should be in di-

rect ratio to the proportion of these constituents, which vary as you see as regards the ammonia from (.3) three-tenths of one per cent. to (9.) nine per cent. and in the phosphates (28.) twenty-eight per cent. to (62.) sixty-two per cent. This difference in different samples, *partially* explains the different effects which it has produced.

I am entirely satisfied that the same difference also exists in many other substances sold as manures, and unless their value be determined by Chemical Analysis, the only possible way for it to be ascertained, those who purchase them will and do suffer continual disappointment and loss.

JAMES HIGGINS,
State Agricultural Chemist.

Denton, Caroline County, Md.

GLOSSARY.

By Dr. Higgins, *State Agricultural Chemist.*

Element, a simple body—Elementary bodies are those which are not composed of two or more *different* substances.

Atom, the smallest particle of matter necessarily incapable of further division.

Chemical Affinity, or Affinity, is that property of the atoms of bodies which causes them to form new combinations, producing new bodies different from those which existed previous to the developement of this property. It is the *force* which occasions the union of *different* kinds of matter, whether simple or compound, and the greater the difference of the properties of bodies the stronger appears to be this species of attraction between them.

Acid, a substance whether sweet, sour or tasteless, which *combines with bases*, forming with them a class of bodies called salts.

Base, a term extended to embrace a large group —compounds of the metals, (with the exception of ammonia) with those substances which support combustion—which having any taste *are not sour*, which are not disposed to unite with each other, but unite readily with acids forming with them a class of bodies called *salts*.

Alkali, an Arabic word applied to bodies having a peculiar caustic taste, in all of their properties the reverse of acids—all alkalies are bases. Caustic potash is a familiar example of an alkali.

Salts, bodies formed by the union of an acid and a base, having properties distinct from either the acid or the base which enter into its composition.

Gas, matter existing in an æriform state, differing from vapour in requiring a much greater force for its condensation. It has different names according to the substance of which it is composed; sometimes it exists as an element, and is then named from some prominent characteristic—thus we have carbonic oxide gas, composed of carbon and oxygen and oxygen gas, which is an element.

Oxygen, a gas most extensively diffused throughout nature, always in combination with some other substance, either mechanically, as in the air; or chemically as in water. It has strong affinity for almost all bodies, and received its name from two Greek words, *oxus*, signifying sour or acid, and *gennacin*, to produce, because when first discovered it was supposed to be the sole cause of acidity—it sometimes is called vital air, because it is necessary to the life of animals and vegetables.

Combustion.—The union of oxyen with any other body accompanied by light and heat.

Oxidation.—The union of oxygen with another body without the concurrence of light and heat. When oxygen unites with metals it produces what is called Rust.

Hydrogen.—A body very extensively diffused through the world, forming a large part of all vegetable matter, and about two thirds of all water. It is the lightest of all bodies, and on that account used to fill balloons; with oxygen it forms water. This is a good example of the change produced by affinity; here two invisible bodies unite to form a third differeht in all of its physical properties from those of which it is composed. It receives its name from two Greek words, *Hudor*, signifying water, and *Gennacin*, to produce, because without it water cannot be formed.

Nitrogen.—A gas very extensively diffused thro' the world, entering largely into the composition of plants and animals, and forming about eight-tenths of the air we breathe; with hydrogen it forms ammonia. It is sometimes called azote, from a word signifying not, and zoe, life, because when breathed alone, life will cease to exist.

Ammonia.—A compound of hydrogen and nitrogen, and very generally diffused throughout nature, being a genial product of the decay of animals and vegetables; it exists in the air we breathe, as has been satisfactorily proven, united to carbonic acid. It is called ammonia, because first made in large quantities at the Temple of Jupiter, Jupiter Ammon, from the dung of camels—when united to carbonic acid it forms what is familiarly known as smelling salts, volatile alkali, from its great volatility; hartshorn, &c.

Carbon.—Charcoal in common language; forms a very large proportion of the structure of animals and vegetables, and is the residue left when they are subjected to a red heat, without the access of air. *Coke* is the charcoal from coal—Ivory Black is the charcoal from bones—Lamp Black the charcoal from Resin. The Diamond is but crystalized charcoal, and Black Lead contains from 90 to 95 per cent. of it. Wood charcoal has the property of absorbing many times its volume of different gases, and of giving them up again when heated. This depends entirely on its mechanical structure, all porous substances acting in the same way to a greater or less extent.

Carbonic Acid, formed by the union of oxygen with carbon, and exists in the gaseous form when not combined with some other body; it is extensively diffused through the earth, air and water—it is always produced by the burning of wood, and is expired from the lungs of animals in breathing. It is found formed with quick lime, common air slacked lime, and with it, forms marble and the different varieties of lime-stone, from which it is expelled by burning. It is the escape of this acid which produces effervescence when soda or seidlitz powders are mixed, and which also causes effervescence when vinegar is poured upon marl.

It is this gas which sometimes causes death to persons who go down into wells; it extinguishes burning bodies, and is called from this fact fire-damp, sometimes also *choke-damp*, from its causing when breathed spasms of the windpipe. Death has sometimes occurred to persons sleeping in a close room, from the production of this gas by a pan of burning charcoal.

This is another good example of the changes produced by affinity; here charcoal which can be seen, felt and handled, when united to oxygen, assumes the gaseous form, becoming invisible and intangible.

ALUMINA or ALUMINE is *pure* clay—it abounds in Fuller's earth, in puddling clay, in the earth of which bricks and pipes are made, and in alum, as when perfectly pure it is white, but in soils where it always exists, it is colored by the oxide or rust of iron. That which is generally known as clay is a compound of pure clay and silicic acid—its use is to form a part of the structure of the plant, and is moreover very beneficial in absorbing moisture and gases from the atmosphere, which are needed by the growing plant. It is the oxide or rust of a metal called aluminum. *Oxide of Iron* is the rust of iron, just as Alumina is the rust of Aluminum.

Iron is susceptible of three degrees of oxidation—the first called the Protoxide, is seldom met with in an uncombined state. The second, the Black Oxide, from its color, and the Magnetic Oxide, from its being slightly magnetic. The scales which fly from a red hot bar of iron is of this degree of oxidation.—The Black Sand used to dust paper after being written on is composed of Silicic Acid united to iron in this degree of oxidation. The per oxide is that degree of oxidation in which iron most generally exists in soils giving them color. It is also the cause of the red color in the common house brick. Its use in soils is very similar to alumina.

SILICA, SILICIC ACID, is pure sand, and is produced by the combination of oxygen with a body called silicon, though without any taste is yet essentially an acid, behaving in the same manner as other acids do, when properly brought into connection with a base, that is, it forms a salt. It forms Rock, Crystal, Quartz, Flint, and common gravel. It forms by far the largest part of all soils, generally from eighty to sometimes even as much as ninety-eight per cent. Its principal use is in combination with other substances, as potash, soda, &c. to form the stalk of wheat, corn, oats, &c.

GREEN SAND, is a Silicate of Potash and Lime, that is, Silicic Acid united chemically to these substances.

FERRUGINOUS SAND, is sand united to the oxide of iron.

SILICIOUS SAND is common white river sand.

PHOSPHORIC ACID is the acid of bones, just as carbonic acid is the acid of limestone and marble. It is formed by the union of phosphorus and oxygen—and with bones forms a class of salts called *phosphates*. It forms more than fifty per cent. of all bony matter, exists in fish, in sea-water, in oyster-shells, *and in lime burnt from them*, in the excrement of men and animals, particularly in the urine in guano; sometimes in marls in soils, in combination with different bases, and is necessary in food to form the bones of animals. It is always found in the seed of grain that is used for food, generally in combination with magnesian lime and ammonia, hence soils must contain these substances or grain cannot be formed from them. Were an animal fed on food containing none of the phosphates, it could not have bones.

It bears the same relation to phosphbrus as sulphuric acid, (oil of vitriol) does to sulphur.

(To be continued.)

POTATOES.—We have received a lot of potatoes, from Thos. J. Saxton, Esq. of Dorchester county, the largest and finest in appearance we have ever seen—31, without being particularly selected, filling a half bushel measure, and having tried them, we consider them equal to the Mercers for the table.—They are sent for Exhibition at the State Society's Hall. We do not know of any of them being for sale.

THE JERUSALEM ARTICHOKE.

This root, though a native of Brazil, is perfectly hardy, and will keep well in the open grounds throughout the winter, when it will be ready to be harvested in spring, to be fed out to the cattle or hogs, or it may be harvested in the fall, and preserved the same way as potatoes are kept through the winter.

Though it would have been better that they had been planted last month, they may still be put in up to the middle of this month, with a certainty of their yielding a good crop, say from 400 to 600 bushels per acre. Any farmer who may have a few acres, which he can spare, permanently, for the purpose, would do well to appropriate it to a patch of artichokes, as, when once planted with them, he may rely upon such ground yielding him good crops for several years, as the smallest part left in the earth will vegetate the succeeding year. As we have before had occasion to remark, in some parts of the West, particularly in Tennessee, it is the custom to turn the hogs in their patches of artichokes, in the fall. These animals, thus placed, go instinctively to work, gather and consume the roots, without requiring any care in watering, as, from the nature of the tubers, sufficient water is supplied by them. It is customary, where hogs are thus turned in to cater for themselves, after they have done, to manure and harrow over the ground. Treated in this way, good crops may be raised for many successive years, provided the grounds be cultivated each succeeding season, so as to keep it open and free from weeds and grass, without the trouble of annual plantings, and thus may the farmer bring his hogs, every fall, to the pen in the best possible condition to have their fat hardened with corn, thereby saving at least half the grain ordinarily used in fattening them.

Preparation of the Seed.—Cut the tubers so as to leave 2 eyes to each set; dry the wounds with ashes or plaster, the same way as in the case of potatoes.

Manuring, Preparation of the Ground, and Planting.—Plough the ground deeply, harrow thoroughly, and roll it; then lay off furrows three feet wide, four inches deep, north and south; that done, place about 2 inches in depth of manure, such as for potatoes, in the furrows, and drop the sets thereon, 18 inches apart; cover with the plough, and roll, so as to bring the earth into immediate contact with the sets, and secure easy germination.

Culture.—Their culture is the same as that of corn or potatoes, the great object being to keep the soil open to atmospheric influences, and the plants clear of weeds.

While an acre would yield from 4 to 600 bushels, half a bushel of the roots, divided into two meals, per day, in addition to the long provender usually fed to milch cows, would keep them in milk through the winter and spring, and secure a plentiful supply of cream and butter; or the roots might be fed to the store hogs, and serve to economise the corn.

When intended to be fed out through the winter, the roots must be harvested in the fall and stored away for preservation, in the same way as other roots.

The *soil* best adapted to their successful culture is a deep sandy loam, though they will yield well in any dry soil of a friable nature.

Quantity of Seed per Acre.—12 bushels of the tubers, if properly cut into sets, will plant an acre.

An acre of artichokes will keep 5 milch cows fully

supplied with the *succulent* portion of their food from the 1st of November till the first of May, securing them, during that period, with the means of secreting milk. Thrice a week a little salt should be strewn over their feed.

DR. MORTON'S GREAT CORN CROP.

In accordance with the request made in our last to P. P. Nalle, Esq., of Culpepper, Va., to give us the particulars of the extraordinary crop of corn made by Dr. Morton, we have received through that gentleman the following statement made by Dr. M. After testifying to the high character of the gentlemen who signed the certificates, Dr. Morton says:

"The first acre on my Slate Hill farm (Culpepper) is seldom overflowed, consequently not as rich as the larger portion of my low grounds. I, therefore, gave it a light manuring, by penning my cattle on it a short time. In February, a bushel of plaster was sown over it; the land was then ploughed with a M'Cormick plough, No. 12, drawn by 3 horses, a subsoil plough (of my own construction) following in the furrow. The two ploughs averaged about 13 inches deep. Late in April, the second bushel of plaster was given it, and the land thoroughly harrowed. On the evening of the last day of April, and the first day of May, the corn was planted in rows two feet apart and one foot in the drill, and covered by a large two horse harrow, (my favorite mode of covering corn, as it gives the corn an additional working.) When about 1 foot high, the single coulter passed twice in the row, passed by a small cultivator once in the middle. It was then thinned to one stalk, and nicely wed out. When about waist high, the hoes passed through it, and the third bushel of plaster was sown over it. Here the cultivation ended. The second acre, on my Soldier's Rest farm, (Orange Co.) is a rich alluvial soil, subject to overflow, receiving, from every freshet, a heavy deposit. It was well ploughed some time in April, with No. 12 M'Cormick, but was neither manured nor subsoiled. About the 10th of May, it was well harrowed, and planted as the first acre. It received one additional working with the cultivator, but had only one bushel of plaster, which was sown over the corn, immediately after the last cultivation. For the production of the two acres, I refer you to the certificate.

I will add, my whole crop was a good one—pronounced by many gentlemen the best they had ever seen—and will state, upon my own authority, I gathered and measured, from three and a half contiguous acres on my State Hill farm, 87 barrels and 2 pecks of corn; and from about 40 acres, nearly 600 barrels, and confidently believe, but for the two freshets of October and November, would have exceeded 600. Yours respectfully,

GEORGE MORTON."

We, the undersigned, do hereby certify that, during last fall, (1847) by the request of Dr. Geo. Morton, of Slate Hill, Culpepper Co., we were present at the gathering and measuring of the corn grown on an acre of land on his "Soldier's Rest" farm, in Orange, the acre having been surveyed by Col. Robert Alexander, in the presence of several of us. and it measured 23 barrels, 3 bushels and 3 pecks. We have no doubt some was destroyed by the extraordinary freshet in October, which was entirely over it. Dr. Morton sold, at the pile, in our presence, to Dr. Thomas Wharton, (one of the undersigned) 20 barrels of the same for 50 dollars cash. Given under our hands, this 22d day of Feb., 1848. [Signed by Thos. Wharton, P. P. Nalle, Thos. Hawley, Geo. Pannill, Sr., and Geo. Wallis.]

By a precise calculation, allowing for what Dr. Morton's lot falls short of an acre, the product, at that rate, per acre, is—28 barrels, 3 bushels, 3 pecks, 3 quarts, 1 pint and $\frac{3}{4}$ of a gill.

October, 23d, 1847. ROBERT ALEXANDER.

ON THE APPLICATION OF GUANO.

MARCH 22d, 1849.

To the Editor of the American Farmer.

I have noticed, in the Farmer for this month, your answer to a Petersburg, Va., enquirer, in regard to the best method of applying guano, in the hill, to a corn crop. I cannot but agree with you in your opinion, that the application of manure to the hill, especially the coarse manure of farm yards, is too partial to be permanent in effect; nor do I think it will be practiced generally by farmers of experience, who have an interest in the permanent improvement of their lands. In relation to guano, however, without presuming to dissent from one of your information in such matters, I will merely state facts that have come under my observation—my inferences from those facts—and leave you to judge whether I am right or wrong in concluding that the most profitable method of applying guano to a corn crop, is in the hill.

I used, last year, three tons of Peruvian guano in the corn crop, and $\frac{1}{2}$ ton of Peruvian, with three tons of Chilian, in corn land, seeded with wheat last fall. The whole of the guano applied to the corn was sown broadcast, at the rate of 350 lbs. to the acre, with the exception of two bushels or 120 lbs., reserved for an experiment. The land lay in four foot ridges, and was so poor that even poverty grass was scarce on it. The guano was sown with a swinging, low cast, the sower walking in the furrows between the ridges; so that the greater part of it, necessarily, fell in the furrows. One and a half bushels of plaster was then sown on the guano, and followed immediately by two ploughs, listing over the old furrows, and ploughing out the ridges. By this method, all the guano, with the exception of that on four lists, ploughed previous to sowing, was turned under. The four rows listed before sowing, were ploughed out after sowing—turning under all the manure but that which fell in the list. I wish you to remark particularly that two-thirds of the guano on these four rows was turned under—the *lists only having it on the surface.* The land was crossed deep by rows four feet apart, and planted with corn rolled in plaster, and covered by a one horse harrow, running on the ridge or list, to the last 5,500 hills, in which the two bushels of reserved guano, mixed with one of plaster, was dropped, at the rate of a handful to four hills, (such a handful as would be taken of wheat to sow at the rate of two bushels to the acre,) leaving one peck of the mixture unapplied. A hoeful of earth was then thrown in each hill, separating the guano from the corn, which was planted in the manner already stated. The whole field was then rolled. The cultivation was two harrowings, two ploughings, and a levelling with flukes in July. The increase over the last crop, on the same land, was from three to four barrels to the acre, with a difference scarcely perceptible, either in stock or ear, between the corn on the land guanoed in the hill, and that on the land broadcast at the rate of 350

lbs. per acre. The corn on the four rows guanoed after the lists were ploughed, was the merest trifle better than unimproved land corn, growing alongside of it.

I believe it may fairly be inferred from these facts, that, as 50 lbs. in the hill, per acre, produced the same effect, almost, as 350 lbs. broadcast, nearly 300 lbs. of the broadcast was thrown away, as far as the corn crop was concerned; and as the wheat ploughed in with 150 lbs. of guano broadcast, last fall, has awaked from its winter sleep, and appears more green and flourishing than wheat on the land to which 350 lbs. was applied last spring, then 150 lbs. at least, of the spring's application, is lost to the wheat. Again, as 50 lbs. in the hill had nearly the effect of 350 lbs. broadcast, and as 350 lbs. broadcast and no part turned under the lists where the corn stood, had almost no effect, I may justly conclude that the way to secure the greatest amount of benefit to a corn crop, and profit to the plantation, from guano, is to place it, in small quantities, directly under the plant, where it can do its work without being disturbed by plough, fluke or harrow.

You can, sir, make what use of this communication you may judge proper. I have to gouge from a worn out soil every red cent I expend in its improvement; and I wish, most sincerely, some one had given me the information relating to this manure, which I have now, at the cost of $100 worth of guano, thrown away. That amount, applied to my wheat, would have doubled my chance for a crop at the coming harvest. Very respectfully,

A KENT FARMER.

CECIL CO. AGRICULTURAL SOCIETY —The meeting of this Society took place on the 4th ult., at Elkton; on which occasion, the Hon. Jas. A. Pearce delivered an address, which, the Elkton Whig says, was able, interesting and practical. The Society have requested a copy of the address for publication, and we are happy to learn that Mr. P. has consented to furnish the same. Mr. Pearce, notwithstanding his public duties in the councils of the nation, and his extensive legal practice, have taken up much of his time, has been very extensively engaged in farming, and has brought into a high state of cultivation a large estate in Kent county, which, when it came into his possession, was nearly valueless. The results of his experience and close observation were, no doubt, presented in his address, and we look for it with much interest, knowing that our readers will receive gratification and instruction therefrom.

ELKTON, April 4th, 1849.

Pursuant to adjournment, the Cecil county Agricultural Society met in Elkton, to-day, and was called to order, by the President at 4 o'clock P. M.

In the absence of the Secretary, H. Vanderford, Jr. was appointed Secretary pro tem.

Hon. James Alfred Pearce, having been invited to address the society, was introduced to the large and respectable audience present, and proceeded to deliver a very able address, eminently practical in its character, and abounding in valuable information, derived principally from his own experience as a practical agriculturist.

It was received with demonstrations of applause, and at the conclusion, Richard C. Hollyday submitted the following motion:

That this Society tender to Mr. Pearce a vote of thanks for his very able and practical address. Which was adopted.

On motion of Thomas S. Thomas, Esq. a committee of three was appointed by the Chair, to solicit a copy of the address for publication; viz: Messrs. Thomas, Gilpin and Hollyday.

Richard I. Foard, Esq. from the committee appointed at a former meeting, submitted a Constitution which was read and adopted:

On motion of Jos. W. Veazey, Esq. Hon. James Alfred Pearce, was elected an honorary member of the society, and the committee appointed to procure the publication of his address, were instructed to inform him of the same.

On motion of Samuel B. Foard, Esq. Maj. John Jones, of New Castle county, Delaware, was also elected an honorary member of the Society.—Maj. Jones was invited to address the Society, but declined on account of the lateness of the hour. He acknowledged, in suitable terms, the honor conferred upon him by the Society, in electing him to honorary membership.

On motion of Geo. W. Oldham, Esq. the Society adjourned. H. VANDERFORD, JR.

Sec. pro tem.

HORTICULTURAL.

WORK IN THE GARDEN.

Ere we call attention to the work to be done this month, we will remind the *ladies* that it is expected that the display of vegetables, flowers and fruit, at the next *Maryland Agricultural Fair*, will exceed, in brilliancy, any similar exhibition of the season, and that reliance is placed upon the fair daughters of our State to make it so.

Now to the work. First,

Melons.—From the 1st to the 10th of this month will be a good time to plant water melons, canteleupes and musk melons. These fruits should be planted as remotely apart in the garden as the size of it will allow; indeed, it would be better that only one kind be raised in the garden: those who are particular, never grow them in the same spot of ground.

Cymblins.—These should be planted the first week in this month.

Sweet Potatoes should be planted as early in this month as the ground can be prepared. The manure should be a compost of rotten dung, mould and ashes—2 parts of the first, 1 of the second, and 1 of the latter.

Early Corn, for roasting ears, cannot be put in too soon.

Early Cauliflowers.—If you have plants of this delicious vegetable, place them out without delay.

Sowing Cauliflower Seed.—Sown seed as soon as convenient, for a late crop.

Early Cabbages.—If you planted out early varieties of cabbages last fall, earth them up, and continue to keep them clean. If you have plants ready, set them out the first seasonable day, taking care to manure and prepare the ground thoroughly.

Sowing Cabbage Seed.—The seed of cabbages, intended for early fall use, cannot be too early sown.

Borecole.—Sow seeds of Borecole, for autumn, winter and spring use.

Brocoli.—If your plants are, as they ought to be, of sufficient size, transplant them the first seasonable day.

Peas.—Plant a bed of peas, to succeed those which you planted last month.

Beans.—All varieties of beans, bush as well as pole, should be planted the first week in this month. To secure a successive supply of kidney and other dwarf beans, it is best to drill in a few rows every two or three weeks during this and next month. Don't omit to plant a bed of *Lima beans.*

Lettuce.—If your plants are ready, set them out, and sow seed at intervals of two or three weeks, throughout the season. As your plants become of sufficient size, tie up the heads, to promote their loafing.

Small Salading, of all kinds, may now be sown.

Radishes.—Sow radish seed the first week in this month, and repeat every two weeks.

Spinach.—Sow spinach seed, every eight or ten days during this and next month.

Parsnips, Carrots and Beets—Drill in a bed of these, for fall and winter use. If you were provident enough to sow last month, be careful to thin out the plants—the parsnips to stand 4 inches apart, the carrots 3 inches, and the beets eight inches apart in the rows.

Celery.—If you have celery plants, prick them out, and sow seed for a principal crop.

Asparagus Beds.—If your asparagus beds are weedy, clean them.

Onions.—See that your onion beds are kept clean of weeds, the ground open, but do not hill up the bulbs.

Early Turnips.—Thin out your early turnips, and sow more seed, so as to prolong your supply.

Parsley.—Sow some double parsley seed.

Salsify or Vegetable Oyster Plant.—This delicious vegetable should now be sown. A few rows drilled in, will serve a tolerably sized family.

Tomatoes—Have you plants ready to set out? If so, set them out. If not, sow some seed. Sow on a warm border, well manured, well dug, and well raked. Soak the seed the night before sowing them.

Red Peppers.—Sow the seed of peppers as near the first of this month as possible.

Endive seed should now be sown.

Okra.—Get in your okra the first 10 days of this month.

Nasturtiums.—The seed should be sown the first week of the present month.

Pot Herbs—Medicinal Herbs.—Sow and transplant these early.

Fruit Trees.—Give your fruit trees a painting with a mixture of soft soap, flour of sulphur and table salt, made in the proportion of 1 gallon soft soap, 1 lb. flour of sulphur, and 1 quart salt. Brush the trees well before applying the mixture. If there is moss on them, scrape it off, and apply a pretty thick coat, from the ground upwards to the limbs.

Strawberry Beds.—If the weather should be dry, water your strawberries.

We shall close our hints of the month by admonishing all to keep their gardens, at all times, free from weeds and grass—the earth well stirred, and, in all seasons of drought, to have the several plots of growing vegetables well watered.

☞Hon. *Henry Clay* has consented to deliver the address at the Agricultural and Horticultural Fair, to be held at Cincinnati, next Fall.

A STATE AGRICULTURAL SOCIETY has been formed in Wisconsin. A number of the leading men in the State are engaged in it.

FLORICULTURE.

Prepared for the American Farmer, by S. Feast, Florist.

WORK FOR MAY.

Annual Flower Seeds, if not sown before, should now be attended to.

Camellias will now have finished their growth, and should be syringed frequently over their foliage.

Dahlias should be planted out towards the latter end of the month, and the first week in June.

Geraniums or Pelargoniums should have plenty of water; and if in water, should be protected from the scorching rays of the sun.

Tuberoses, Tiger flowers, Gladioluses, and other summer flowering bulbs, should be planted immediately.

Tender Annuals, sown in pots or boxes, in March or April, may now be transplanted to the border.

Oranges and Lemons, if flowering, should receive plenty of air and moderate supplies of water.

Roses, Verbenas, and other summer flowering plants, may be planted out, with success, this month.

Azaleas should have plenty of water.

THE LATE FROST.

BALTIMORE, April 24th, 1849.

To the Editor of the American Farmer.

The various accounts of the late frost, from different parts of the Union, agree that it has been more destructive to vegetation than for many years previous. On examining the blossoms of fruit trees, I find nearly every one destroyed, (the early ones,) likewise all of our most ornamental flowering shrubs, many of them natives of Maryland.

The Japanese and Chinese plants (which we are so much indebted to, for their early bloom) are, with one or two exceptions, all gone. Cydonia, Japonica or Japan Quince, Pyrus Spectabile, or flowering apple, and Camellia Japonica, or Japan rose, "the flowers of which are not injured in the least," while the Magnolia Glauca or Swamp Magnolia Tripetala or Umbrella tree, Magnolia Accuminata, or Cucumber tree, (these are native of Maryland) Magnolia Macrophylla, Flowering Ash, and many other varieties, are entirely destroyed.

By these severe late frosts, if they prove that many trees suffer from the rapid changes of heat and cold, they show that others are more hardy, such as Paulonia Imperialis, "from the mountains of India," a tree of peculiar character, forming its buds early in the fall, at the end of each branch, the flower stems resembling a miniature tree, from 6 to 12 or 14 inches in length. Also Spirea Prunifolia Plena, from Tartary, a low growing shrub, covered all over with small white flowers, (recently introduced, and ought to be in every collection) are not in the least affected.

The kitchen garden has suffered very considerable. Many of the gardeners around the city are ploughing up their early crops. The only way I can account for such a general sweep, was the want of moisture in the atmosphere, and warm weather we had for two weeks previous, as the thermometer only fell to 24, or 8 degrees below freezing point, a degree of cold that would not have affected many of the plants that were injured, had there been a sufficiency of moisture. SAMUEL FEAST.

P. S. I send you a Camellia flower, cut from one of Dr. Edmondson's trees, in the open ground, growing in a north west exposure, and shaded with large trees. S. F.

Review of the Tobacco and Grain Markets: reported for the "American Farmer," by J. W. & E. Reynolds, Farmers' and Planters' Agents, May 1, 1849.

As it regards *Grain*, and particularly *Corn*, there has been an improvement of a few cents per bushel since our last report, and the *demand*, for all sorts, is greater; and we flatter ourselves that this state of things may continue, at least for a while; but, as we stated on a former occasion, there is never much *stability* in the grain market. We quote, to-day, good to fair red *Wheat* at 95 to $1.00; white do. 1.00 to $1.05; do. for family flour, 1.12 to $1.14. *Oats*, 25 to 28. *Rye*, 53. White *Corn*, 45 to 46; yellow do. 52 to 53.

Tobacco.—Since our last, the "common sorts" of both the old and the new crop have declined a shade or two, and the market for this description is still VERY DULL; but the "better sorts" continue in good demand, at fair prices, and are taken almost as fast as inspected, at from 5 to $8 for good and fine reds; but this remark relates to the *finer sorts* only, as the middling qualities are not so brisk, and it is hard to force sales of the common sorts, unless at LOW RATES.

The weather, the present spring, has been very unpropitious for packing, and we have had more "stayed" or suspended tobacco than usual, which has a tendency of not only injuring the sale of what is stayed, but also of that which is *not* "stayed," as it produces a want of confidence on the part of the purchaser, fearing that both may be more or less injured, which is particularly the case with the naturally critical and shrewd German, who seldom ever fails to condemn it in some particular, and quite as much, or perhaps more, if it should be the very "clean scented" article which he wants. We would, therefore, advise our planters to attend PERSONALLY to the packing of their tobacco at this time, and we may add, indeed, *always*. Many of our oldest and best planters are still attached to an old habit of tieing up their tobacco in *large* size bundles, which, sometimes, causes it to *funk* and mould in the *head*, and is always soonest seen when put in the sample. It is now too late for those attached to this habit to change it, but we hope it will not be forgotten by the next season, as though it might appear, in the eyes of the "planter," to be but a small matter, yet it helps the sale of his "staple," which, too often, is the only article he has to sell. And we would further advise the tieing up with the best instead of the worst leaf on the stalk. As it is impossible to describe the particular size of the bundle mostly desired, we shall take the liberty of naming several gentlemen—and we hope they will excuse us for doing so—who are in the habit, among many others we might also name, of handling their tobacco very nicely, and the size of their bundles are "*just right*," so that their neighbors may, if they desire it, copy their example. We would name, in Prince George's county, Thos. F. Bowie, Esq., Mr. James Somerville, Jr, Mr. A. H. Scott, Mr. Jonathan T. Sasscer, and Jos. A. Turner, Esq. In Calvert, W. M. Edelen, Thos. J. Chew, Esqrs., Dr. James A. Chisley, Dr. John Gibson and Thos. J. Grahame, Esqr.; and we might add, as now coming within our recollection in this particular, John S. Sellman, Esq., of Anne Arundel, and, indeed, many others, which it is not necessary to name.

The last accounts from Europe, as effecting our tobacco trade, are, at least, no worse; and we shall hope for "better times;" but the ways of "Denmark" towards the yet oppressed "Holsteins" are still *dubious*, particularly if she is to be backed by Russia, and the other Germanic States determine, after all, to die by "Schleswig-Holstein."

We now quote common dark crop and second Tobacco at 2 to $3; good crop, 3½ to $4½; good and fine reds, 5 to $7, and sometimes, for very fine, as high as 8 to $9. Ground leaves are very dull and hard to sell at any price, unless they are *very fine*. Ohio, common, 3½ to 4½; fair to good reds, 5 to $9; spangled, 6 to $10; yellow, 10 to $18; fine wrappers, 12 to $20.

P. S. Since the last paragraph of this report was written, there has been an arrival from Europe, by which we learn that hostilities had commenced between Denmark and Holstein. The grain market had improved, and cotton depressed.

METEOROLOGICAL TABLE,

From the 20th of March to the 21st of April.

Kept at Schellman Hall, near Sykesville, Carroll County, Md.

Taken at 6 o'clock, a. m., 2 o'clock, noon, and at 6 o'clock.

	Wind.			Temperature			Remarks.
21	s		sw	57	63	57	Rain 1 inch
22	nw	nw	w	32	49	45	Clear
23	w	sw	sw	29	54	47	do
24	w		s	33	60	57	Fog Clear
25	sw	sw	nw	53	54	46	Cloudy Rain 1 in. Clear
26	nw	nw	w	33	45	43	Clear
27	nw	nw	nw	29	35	39	Cloudy, snow 1 in., hail
28	nw	nw	nw	33	41	40	Cloudy Rain Cloudy
29	nw	sw	s	40	57	56	Cloudy Clear
30	w	sw	w	45	59	56	Clear
31	w	w	s	51	68	68	Clear
1	nw	nw	nw	40	50	48	Clear
2	nw	nw	w	32	50	50	Ice Clear
3	nw	sw	s	35	64	61	Clear Cloudy
4	w	w	w	48	60	65	Smoky Shower
5	w	w	w	56	59	50	Clear
6	w	w	s	55	58	55	Clear
7	nw	w	sw	40	73	68	Clear
8	s	s	sw	59	73	68	Clear
9	sw	sw	se	45	48	45	Rain Shower
10	s	sw	w	43	54	48	Fine rain Clear
11	nw	w	w	47	60	50	Clear
12	w	w	w	43	61	60	Clear
13	w	s	w	46	74	59	Clear
14	nw	nw	nw	40	43	35	Clear
15	nw	nw	nw	28	40	33	Frost Clear
16	nw	w	w	26	44	41	Clear
17	w	sw	s	34	54	51	Clear Cloudy
18	sw	w	w	41	40	37	Cloudy, Snow. Clear,
19	nw	w	w	29	54	45	Snow storm 2 in. Clear
20	nw	nw	nw	36	35	48	Clear

CAUTION.—The *surprising fertilizing* effects produced by the *Agricultural Salts*, manufactured and sold by the undersigned, may induce some unprincipled person or persons to attempt to deceive, by manufacturing a *spurious article*, and representing it as the same, or equal to ours as a fertilizer of the soil. Having already had intimations that such is the case, this *caution* is deemed necessary to put farmers and others on their guard; as no article can be efficacious, unless it contains *all*, and the same materials, and combined in proper proportions; such a preparation without our consent, will be an infringement of our patent; and dealt with accordingly; *any other* is a base *imposition, and should be rejected*. In sending orders to the city for the purchase of our article, be particular to have none but "*Chappell's Fertilizer.*" The name is stencilled on every barrel.

P. S. CHAPPELL,
WM. H. CHAPPELL, } *Patentees*,
Corner of Hanover and Lombard Streets.
Baltimore, April 1st, 1849. apl.

☞*A good supply of the* "FERTILIZER" *now on hand,—Orders promptly executed.*

RAM LAMBS.—For sale, several Ram Lambs, got by one of the finest of Mr. Reybold's New Oxfordshire Rams, from choice Ewes of a cross of the South Down and Bakewell breeds. These are very fine animals, and can be highly recommended to those who wish to improve their flocks. Price, delivered in Baltimore, at $10—they are of this spring's yeaning, and will be delivered in August or September. Address the publisher of this paper. apl-3t

Circular to the Farmers of Maryland.

YOUR attention is called to a new article of Manure, manufactured in Baltimore, known as CHAPPELL'S FERTILIZER, OR AGRICULTURAL SALTS. This article is composed of the same materials as are found by analysis in the ash of plants. It consists of a mixture (in proper proportions) of *Bi Phosphate of Lime, and Magnesia* (or bones dissolved in sulphuric acid,) *Sulphates of Ammonia, Potash, Soda, and Lime, Animal Charcoal, Silicates of Potash, Alumina and Magnesia*, and, as these constituents indicate, is intended to restore to the soil, all the inorganic materials abstracted by vegetation. It has been ascertained that a soil containing a sufficient quantity of these salts, is always fertile; and their absence constitutes what is called "*Worn-out Land.*" The analysis of rich soils show a good supply, and poor land a deficiency.

The inorganic matter abstracted from the soil by the growth of different crops is the same, varying only in proportion, it is therefore evident that if we supply to the soil a sufficient quantity of each material thus abstracted, we restore its fertility.

The correctness of the above, has been fully sustained by the use of the agricultural salts, the last season. It has been used on *poor land*, and 25 to 28 bushels of wheat obtained, with a superior crop of clover. As a top dressing on wheat, 8 bushels additional has been realized. On the spring crops, of corn, oats and clover, the yield has been doubled.—It has been used on the same field, (as an experiment) with the best Peruvian Guano both on corn and oats, and the yield has resulted in favor of the Fertilizer. The most respectable reference can be given of its value and effects on poor land.

This article having been used with such favorable results, the manufacturer now offers it to agriculturists with the full confidence that it will largely repay for the outlay, and that it is the cheapest manure they can use.

On very poor land 2 barrels to the acre should be applied, on that in better condition, one, to one and a half barrels. It is calculated in using two barrels you supply to the soil sufficient salts for a rotation—as a top dressing, one barrel put on after a rain, or when the land is wet, and in all cases near the surface and not ploughed in, broadcast and harrowed when practicable. The Ammonia in this preparation is a Sulphate, and therefore not volatile as in Guano, the Bi Phosphates being soluble,—the rain dissolves them, and they thus saturate the soil with prepared food, ready for the nourishment of the plant; being rich in Sulphates, they are powerful absorbents of ammonia from the atmosphere.

As this Fertilizer can be manufactured only to a limited extent, and as the demand during the seeding season, during last fall, was much greater than could be supplied, it would be advisable for those who may wish to obtain a supply in time, to send in their orders and purchase at once.

Price $20 per ton of 2000 lbs. put up in barrels, of 300 lbs. each. Terms, cash on delivery. Address,

P. S. CHAPPELL, Chemist, Corner of Hanover and Lombard-street, (Up Stairs,) Baltimore.

Note.—Guano is deficient in alkalies and sulphates—this preparation has a sufficient supply, and for this reason on some soils, is superior to it for producing large crops. *Patent Right secured.* feb 1

FOR SALE.—100 bushels of BONE SHAVINGS—by R. BALL,
feb 1-tf East Falls Avenue, near the Bridge, Baltimore.

A BOOK FOR EVERYBODY!

COLE'S
AMERICAN FRUIT BOOK.

S. W. COLE, Esq., Editor of the New England Farmer, and author of the popular work entitled The American Veterinarian, of which 22,000 copies have already been published, has, after years of patient labor and close investigation, completed his great work, entitled

COLE'S AMERICAN FRUIT BOOK,

A work which we believe is destined to have a more widely extended circulation than any similar work, ever before offered to the American public. We believe so for the following reasons:

FIRST, It is a mature work and a practical one, one on which Mr. Cole has spent many years of study and close examination, and knowing the wants of the community has met those wants, in a plain, concise and familiar manner, avoiding technicalities, and ultra scientific specifications and definitions, useful only to the few, he has made a work intelligible to all. It will be emphatically a book for

THE PEOPLE.

SECONDLY, It will have an unprecedented sale on account of its *cheapness*. It makes a volume of 288 closely printed pages. Illustrated with over one hundred beautifully executed engravings, by Brown, and will be sold for 50 cents, firmly bound in Leather, and 62½ cents in Fancy Cloth, with gilt backs. It will contain full directions for Raising, Propagating and Managing Fruit Trees, Shrubs and Plants, with a description of the best varieties of FRUIT, embracing several new and valuable kinds; embellished with Engravings, and outlines of FRUIT TREES, and various other designs. Emphatically a

Book for Everybody.

As well for the man who eats Fruit, as for him who raises it.

This valuable work is just from the press and is now for sale at our counter, and will be offered for sale by our regular Agents throughout the country.

John P. Jewett, Publisher.

apl–2t 23 CORNHILL, BOSTON.

PLOUGHS! PLOUGHS!!

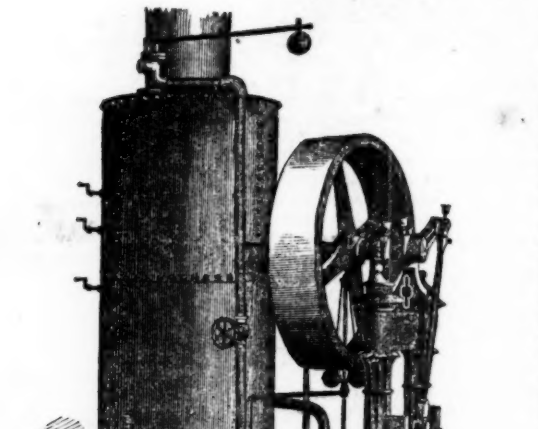
AMONG the Ploughs at Whitman's will be found the Prouty & Mears; Ruggles, Nourse & Mason's; Minor & Horton; Moore & Chamberlain; Wiley; Woodcock; Davis & Chenoweth, of all sizes; and various other kinds of Ploughs in use in Maryland.

The Premium Hay and Manure Forks, Thermometer Churns, Sausage Stuffers, and various other premium articles too numerous to particularize, are also found at Whitman's, Corner of Light & Pratt-sts., Baltimore. dec 1

PLOUGHS! PLOUGHS!!

The subscriber is manufacturing Ploughs of various patterns and of different sizes; also Wheat Fans, Cylindrical Straw Cutters, Corn and Tobacco Cultivators, CORN SHELLERS, &c. Also, THRESHING MACHINES and HORSE POWERS—these latter are used by the following gentlemen, to whom reference is made, as to their superior value, viz: Messrs. T. Beard, Th. Beard, Dr. Watkins, J. T. Hodges, T. Welsh, W. Mackall, J. Inglehart, A. Sellman, R. Sellman, W. Hopkins, J. Kent, Geo. Wells, Geo. Gale, Dr. Fenwick, A. Franklin, J. C. Weems, of Anne Arundel county; G. W. Weems, J. T. Barber, R. B. Chew, W. Boswell, Y. Howes, of Calvert co., Md. Agent of Evans Davis, Baltimore co. for sale of the woodcock Plow. Pennsylvania Grain Cradles. CHAS. H. DRURY.
Gillingham Alley, entrance from Howard-st., near Pratt,
mal and store, Hollingsworth-st. corner Pratt.

C. W. BENTLEY & CO'S. PORTABLE STEAM ENGINE AND BOILER.



THE annexed cut represents a Horse Engine and Boiler, standing on a cast-iron plate, 3 feet by 6.

The frame of the engine consists of fluted columns; the cylinder and slide are cast in one piece. The crank end of the shaft rests on the pillar block on the top of the frame; the other end is supported by a bracket attached to the boiler. The small cylinder standing between the Engine and Boiler, as represented in the cut, is the heater or condenser, and is filled with a coil of ¾ inch pipe. On an arm cast on the cap of the heater rests the governor; the whole constituting a beautiful machine. Its superiority consists in its simplicity and compactness. They are placed in the 2d and 3d stories of buildings for operating printing presses, or for anyother purpose where power is required. They may be placed over Dry Goods stores with perfect safety, there being no more danger from fire than with an ordinary stove—nor of damage by water, as the plates on which they stand are furnished with a groove or trench, where all the waste water is collected, and conducted off by means of a pipe. The boiler is on the tubular plan, and made out of heavy wrought iron, which gives it great strength.

They can be used in the cutting of Timber—also for Thrashing, Grinding Corn, propelling Corn and Cob Crushers, and in fact, for any purpose requiring motive power. They are simple, safe, and durable, and can be managed by any person of ordinary capacity.—They are made of various sizes, from 2 to 20 horse-power. A 6 horse-power, and boiler, which is a medium size, costs $600—a 2 horse-power, and boiler, $300. There are a number of them in use, which can be seen in this city, and have given general satisfaction, and we warrant them in every respect.

C. W. BENTLEY & CO.,
E. Falls Avenue, near Pratt-street Bridge, Baltimore.

may 1–1t.

PLANTING CORN, &c. BY MACHINERY.

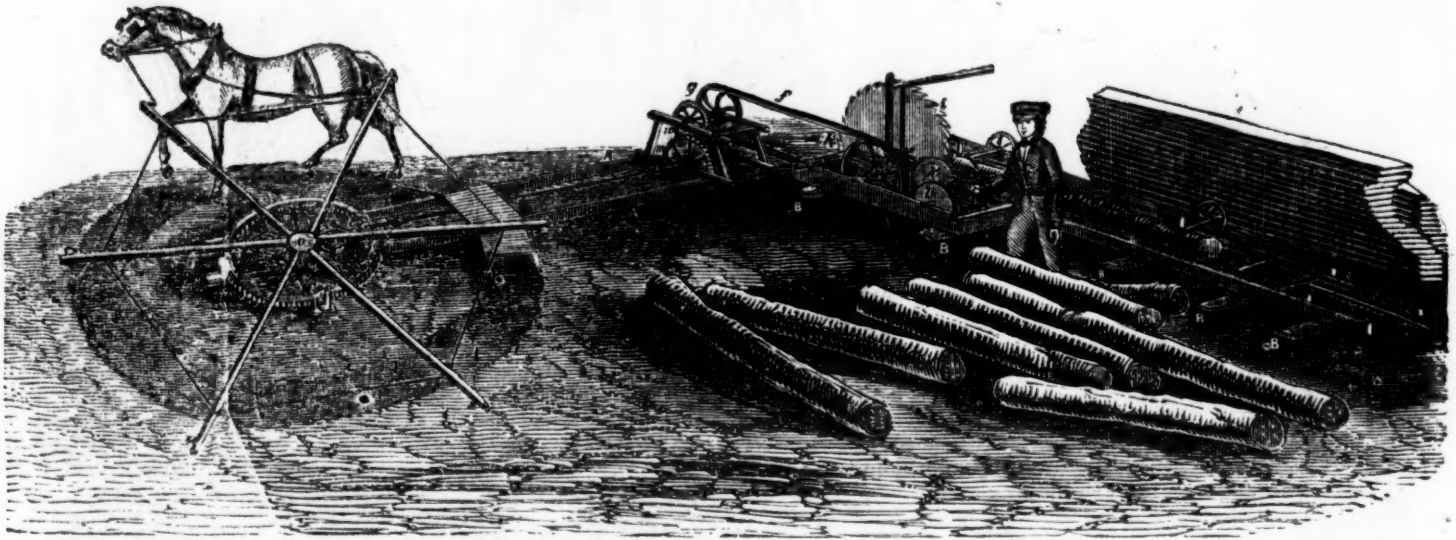
THE subscribers are now making their Improved Maryland CORN DRILLS, which after several years trial, they are prepared to recommend them as the best field machine now manufactured. The construction is remarkably simple, and strong enough to be worked by the most careless farm hand, in the roughest cultivated fields.—Corn, Beans, Peas, Beet, Turnip, Carrot, Broom Corn, Parsnip Seed, &c. can be drilled perfectly, and at any desired distance apart. Price $20; with wheel in front, $21.

☞Also, in progress of construction, 100 WHEAT DRILLING MACHINES, with valuable improvements.

my 1 R. SINCLAIR, JR. & CO., LIGHT STREET, Baltimore.

much improved, and manufactured at the Patentee's establishment, Baltimore. S. Sark, Day, Stauffer & Co., and J. A. Brand & Landry, of New Orleans, are also general Agents of the Patentee.

my 1–1t. GEO. PAGE, Baltimore, Md.



PAGE'S PATENT PORTABLE SAW MILL AND HORSE-POWER.

THIS valuable Mill is now so well known, and its reputation so firmly established, that the Patentee deems it unnecessary here to present any certificates of its value and power of performance—but those who may require minute particulars in regard to it, can, on application to him, obtain copies of a pamphlet embracing every necessary information relative to the power, prices, agents, and a list of the names of gentlemen in the several States of the Union, who have purchased, and are now using them. He only deems it necessary in this advertisement to say that he continues to supply orders at his establishment in Baltimore, and the Mills shipped to any part of the country to which they may be ordered. GEORGE W. CUNNINGHAM, of Athens, Kentucky, is the Agent of the Patentee for the sale of his Improved Patent Portable Saw Mill, suitable for any motive power, Horse, Water, Steam or Wind, in all States of the Union, except Illinois and Missouri, giving to the purchaser the right to use them in any State belonging to the United States or elsewhere. The Mills sold by him are much improved, and manufactured at the Patentee's establishment, Baltimore. Stark, Day, Stauffer & Co., and J. A Brand & Landry, of New Orleans, are also general Agents of the Patentee.

my 1–1t. GEO. PAGE, Baltimore, Md.

PAGE'S TIMBER WHEELS

We would direct attention to owners of saw mills, contractors for furnishing heavy timber, and owners of timber land, to the above drawing of a pair of wheels, introduced by Mr. George Page, of this city, and believed to be among the best of his labor-saving inventions. We saw its operation, a year or two ago, at the saw mill of C. B. Calvert, Esq , and was struck with the power and simplicity of its operation. This machine may not only be called a labor-saving one, but a power-increasing one also. Its use is to remove logs of all sizes to any desirable point, and so happily contrived are its points and adaptions, that a *boy* can load it, no matter how large and unwieldly the logs may be. The saving thus effected in labor, every man can judge from the fact stated. Should any farmer desire to purchase the *gear* without the wheels, he can be accommodated by sending the size of the boxes and length of the hubs of his wheels. Price of the Timber wheels complete,

CHAPPELL'S FERTILIZER.

MR. Sands will oblige me by publishing the following letter, from R. H. WORTHINGTON, Esq., whose experience as a practical farmer is well known. I have received equally satisfactory testimony from other sources, which, if you will permit, I will publish hereafter—I can produce such an array of facts going to show the great fertilizing powers of my agricultural salts as will convince the most incredulous. Respectfully,

April 27, '49. P. S. CHAPPELL.

BALTIMORE COUNTY, March 26, 1849.

Mr. P S. Chappell—Dear Sir:—I take great pleasure in contributing to the already acquired fame of the utility of your "Agricultural Salts." The one hundred barrels which I procured from you, I applied to about 60 acres of worn-out land—which I sowed in wheat, and harrowed in with your "Fertilizer," and the result, thus far, I assure you, has exceeded my most sanguine expectations.

I omitted sowing one land with the Salts, about the centre of the field, and must remark, there will be no yield. The clover which was sowed at the same time looks proportionately promising—and what I have witnessed of the good effects of its agency as a "Fertilizer," can safely say, that I consider myself amply remunerated and fully justified in my purchase. Respectfully yours, &c.

R. H. WORTHINGTON,
Diamond Ridge.

Honor to whom Honor is due.

THE subscriber would say to the Agricultural part of the community that he feels thankful for the patronage he has received for the last 16 years, and in particular for the last 8 years in Lancaster, Pa.

The subscriber after a series of years experimenting, has invented the greatest improvement in Grain Fans or Winnowing Mills in the United States, to his knowledge, and does its work better, faster, cheaper and cleaner than any other. I can take half a bushel of cheat, half a bushel of cockle, and mix with it one peck of wheat, and in one cleaning take all the filth out and make it perfectly clean for seed. For fast cleaning, I can give thousands of certificates and recommendations from the greatest farmers in the States of Pennsylvania, Delaware, Maryland, New Jersey, and Virginia. I have also sent a few that were ordered to Ohio and North Carolina. In 57 minutes my Combined Patent Mill chaffed 167 bushels of wheat—and others I can give who say they have chaffed 1000 bushels per day, Mr. Holcomb, Dela., and Mr. Thomas Ward, Cecil county, Md.

His Fans have taken the premium at 16 different exhibitions of Farming Implements; six of which premiums and two silver medals were awarded last fall, viz: The Philadelphia Agricultural Society, at the Rising Sun, on the 6th of October, 1848, the New Castle Agricultural Society, October 11th, the Mount Holly, (N. J.) Society, October 11th, at Newton, Bucks County, October 12th, at Jeffersonville, Montgomery County, Pa., October 18th, Maryland State Agricultural Society, held at Baltimore, on the 9th and 10th of November, 1848, a Silver Medal from the Franklin Institute, on the 27th of October, 1848, and one from the society at Easton, eastern shore, Md., about the 17th of November last. The committees of the several societies, state in their report that they consider this Fan a "very complete and excellent Machine," deserving the attention of every Farmer.

The undersigned also has shops at New Hope, Bucks county, and Elkton, Cecil county, Maryland.

All Mills manufactured by me have my name on them. I now offer to the public to sell Patent Rights on reasonable terms, as I have the whole United States to sell, and being engaged in other business I cannot leave home to sell them. Great inducements are now offered to agents to sell Rights. In this way the public would be more benefitted by said Improved Fan.

Direct to me, Lancaster city Post Office, Lancaster county, Penn. JOHN BAMBOROUGH, Patentee.

Patented March 20th, 1847.

N. B.—I would hereby caution the public not to trust any of my agents on my account, as I will not pay any such debts; this has been my practice for the last sixteen years.

my 1-1t. JOHN BAMBOROUGH.

IMPORTANT TO TOBACCO PLANTERS.

THE undersigned most respectfully call the attention of Tobacco Planters to their Chemical preparation for the improvement of the growth and quality of this plant. Their preparation will be known as "Kettlewell & Davison's Tobacco Generator," and is manufactured expressly for the object indicated—the utmost care and investigation having been made to secure all the inorganic elements necessary to its growth and quality. Its effect upon poor and impoverished lands will require the test of experience to make it justly appreciated. The undersigned honestly believe that this compound will prove of vast importance to the Tobacco interests of the State; but prefer reserving any further expression of their opinion of its qualities, sincerely hoping, that sufficient enterprise will not be wanting to give it a fair trial, no difference how small the experiment.

The material of which the "Generator" is composed is alike scarce and expensive, therefore those who desire to make the experiment will do well to apply early. It is put up in barrels of 300 lbs. each, and should be applied upon the surface of the ground, in quantities from two to four spoonfuls upon each hill, according to the quality and condition of the soil. Price $30 per ton, or $5 per bbl. KETTLEWELL & DAVISON,

Factory, Hamburg-street, Federal Hill. Office at Ober & Mc Conkey's, Wholesale Drug Store, N. E. cor. of Lombard and Hanover streets.

The subscribers also avail themselves of this opportunity to inform the Farmers and Planters of this State, and elsewhere, that they have established, under the firm of Kettlewell & Davison, an "Agricultural Depot," in Baltimore, for the manufacture of CHEMICAL MANURES adapted to all descriptions of grain, grass and tobacco. They will, in due season for the fall crops, present to the public (sustained by certificates of the ablest chemists and the most practical and accomplished farmers) their "Agricultural Renovator," a chemical manure for the rapid and permanent improvement of land, which experience will show to be inferior to none now attracting the attention of agriculturists. Orders for the Agricultural Renovator, for the corn or oats crop, will receive prompt attention.

Price, $20 per ton, in bbls. of 300 lbs. each.

JOHN KETTLEWELL,
WILLIAM DAVISON, Chemist.

When the undersigned wrote their advertisements of Chemical Manure, they had not intended to present any testimony of its quality, at this time; but, upon reflection, and feeling the importance of getting their Agricultural Renovator into notice at an early day, they have determined to place before the public the following communication and analysis, made by the late lamented and distinguished Professor Ducatel, in whose sudden death the science, as well as the agricultural interests of Maryland, have met with no ordinary loss. A name so well known as the late State Geologist, for high capacity and unblemished purity of character, will, it is believed, satisfy the public that, in the purchase of their article, all cautions of impositions, if directed against them, would be alike futile and impotent. The original communication of Professor Ducatel is left at the Maryland State Agricultural Society's Hall. KETTLEWELL & DAVISON.

BALTIMORE, April the 7th, 1849.

Mr. *John Kettlewell*—Dear Sir: After witnessing the process through which you carry on the operations in the manufacture of your *Fertilizing Salts*, and being perfectly satisfied that you were proceeding artistically in the matter, I have, at your further request, submitted to analysis the result of the various mixtures growing out therefrom, and I have to report as follow:

COMPOSITION—Bi-phosphate of Lime	60
Potassa	10
Nitrate of Soda	10
Sulphate of Ammonia	5
Animal Matter	15
	100

It is evident, from the consideration of the constituents of the mixtures, as represented above, that it cannot fail to be of infinite benefit to almost all kinds of soil. I would have no hesitation in recommending it to our farmers, without any other restriction, at first, than moderate application, by way of experiment. Of course, not having any *experience* myself of its actual efficacy, I feel bound to express the latter restriction, without, however, entertaining much doubt as to the final result.

I may add, that in consideration of the proportion of *animal matter* which the mixture contains, there is reason to believe that a large proportion of *Ammonia* will be evolved, which, besides enhancing the value, will render it more permanent. Further, I have no hesitation in saying that your compound of "*Chemical Salts*" is at least equal, if not superior, always with the proviso of being judiciously applied, to any other that I have had occasion to examine so far, without excepting the now well known article called *Peruvian Guano*.

my1 Very truly, yours, &c. J. J. DUCATEL, Chemist.

250 THRESHING MACHINES.—E. WHITMAN, Jr. will offer a still larger stock of Threshing Machines this season than he did last—consisting in part of his Premium Wrought Iron Rail-way Horse-Power, for one and two horses; also the Fitz-Kirkpatrick, or Pennsylvania Power, the Allen Power, and various others. Persons wanting Threshing Machines would do well to send their orders early, in order to receive machines when wanted.

myl E. WHITMAN., Jr.

WHEAT FANS.

GRANT'S, Bamborough's, Strong's, Rice's, Hayford's, and all good Fans, will be kept for sale by us, this season, as as low as can be bought in the State.

E. WHITMAN,
Agricultural Warehouse and Seed Store,
myl Corner of Light and Pratt street, Baltimore.

ROCK SALT.

AN excellent article for Cattle, for sale by
E. WHITMAN, JR.

SCYTHES, Grain Cradles, Horse Rakes, Hand Rakes, Pitch Forks, and all kinds of Harvest Tools, Wholesale and Retail. E. WHITMAN, JR.
Agricultural Warehouse and Seed Store,
Corner of Light and Pratt st., Baltimore.

PLOUGHS.

PROUTY & MEARS', Ruggles, Nourse & Mason's, Minor & Horton's, Chenoweth's, Davis', Woodcock's, Sinclair & Moore's, New York Ploughs, &c. &c., for sale by
E. WHITMAN, Jr.,
Agricultural Warehouse and Seed Store,
myl Cor. of Light and Pratt st., Baltimore.

PREPARED GUANO.

THIS is not an adulteration of the imported guano, but a compound of some eight domestic permanent and well known fertilizers, Bone Dust being a component part thereof. Having been appointed, by Kentish & Co., of New York, as Agent for the sale of this article, we are now prepared to furnish it to farmers and gardeners at New York prices.
E. WHITMAN, Jr.,
Agricultural Warehouse and Seed Store,
myl Cor. of Light and Pratt st., Baltimore.

CORN PLANTERS.

THIS is the most labor-saving farm implement in use, and no farmer who raises corn should do without one. With this Planter, a boy, with one horse, can plant ten acres of corn in one day, and the work done more perfect than by hand. Price, $20.
E. WHITMAN, Jr.,
Agricultural Warehouse and Seed Store,
myl Cor. of Light and Pratt st., Baltimore.

CULTIVATORS.

WHITMAN'S CULTIVATORS took the first premium at the State, and also at the County Fairs, and are sold as follows, viz: $4.50, $5, $5.50 and $6.50.
E. WHITMAN, Jr.,
Agricultural Warehouse and Seed Store,
myl Cor. of Light and Pratt st., Baltimore.

CHURNS.

WE have the exclusive Agency for the sale of Kendall's Churn, and can supply the trade at Boston prices.
E. WHITMAN, Jr.,
Agricultural Warehouse and Seed Store,
myl Cor. of Light and Pratt st., Baltimore.

NOTICE.

AS Kettlewell & Davison have located their office in the same building, notice is herby given, to all who desire to purchase my Agricultural Salts, that my office is UP STAIRS, *Corner of Hanover and Lombard streets.*
April 27th, 1849. my 1 P. S. CHAPPELL.

LIME.

THE subscribers are prepared to furnish Building and Agricultural Lime at the depot on the Back Basin, corner of Eden and Lancaster-sts., which they will warrant to give satisfaction, it being burnt from pure Alum Lime Stone, equal to any found in the United States. Orders may be left with WILLIAM ROBINSON, No. 15 Hollingsworth-street, near Pratt.
feb. 1–tf. FELL & ROBINSON City Block

PIGS FOR SALE.—2 BOARS three-fourths Chester and one-fourth Berkshire, about 4 months old—very fine animals, and of superior stock—$5 each. Also, 3 full bred Chester Boars, same age and stock, $8 each Apply at this office. my 1

PREMIUM THRESHER AND CLEANER

FARMERS who want their wheat threshed, cleaned and screened at one and the same operation, with more economy of wheat, time and power, and also perfection of apparatus, than that done by any other machine of the same cost, now known, would do well to send on their orders without delay, remembering the shop rule, "first come first served;" we, however, hereby promise to make every effort to supply our customers with machines, which for workmanship and judicious arrangement, founded upon principles at once plain, simple and practical, being easily used by ordinary farm hands.

We will deliver a Thresher, with its attachments for cleaning and screening, similar to the one which took the 1st premium (and that by universal consent,) at the last Exhibition, in the city of Baltimore, or at an equal distance in other directions from our shop for $110, or at the shop for $100.

Since the Fair we have made an improvement in the tread power, (which we purpose patenting,) by which one-third more power can be gained from the same weight of horses.—This superior Power will be furnished as above for 2 horses for $100, and for 3 horses $110. With the latter power from 25 to 35 bushels Wheat can be threshed, cleaned and bagged per hour. We are about getting up a set of patterns for Lever Powers, which we warrant a decided improvement in said powers, which will be delivered in Baltimore, for $70, or at the shop at $65.

Persons who have Water Power, by using our Thresher and Cleaner can have a splendid threshing arrangement.
ATLEE & BLYTHE, New Windsor, Carroll Co., Md.

A. G. MOTT,
MANUFACTURER OF PLOWS, HARROWS, CULTIVATORS, GRAIN CRADLES, WHEAT FANS, CORN SHELLERS, CYLINDRICAL STRAW CUTTERS, &c. &c.

☞ Plow Castings, of the New York composition chilled metal, always on hand, and old implements repaired, at No. 8 ENSOR STREET, adjoining the Bel-air Market, Baltimore.
Jan1

DEVON STOCK FOR SALE.—A handsome thorough bred, four year old, Devon Bull, with balls on his horns, and ring in the nose—perfectly quiet and manageable. Also BULL CALF, five months old, of the same breed. Enquire of the Editor of the Farmer. Price $50 each. my 1

LIME—LIME—The subscriber is prepared to furnish from his depot at the City Block, Baltimore, ALUM STONE LIME of the purest description, deliverable at any point on the Chesapeake Bay or its tributaries, at such prices as cannot fail to please.
He is also prepared to furnish superior building Lime at 25c. per bushel, in hhds., or at $1 per bbl. E. J. COOPER,
july 1 City Block, Baltimore.

Hussey's Reaping Machine.

THE increasing demand for this implement has induced the subscriber to make larger preparations for the harvest than in any previous year, yet it will be necessary in order to avoid disappointment, that farmers send in their orders at an early day. OBED HUSSEY.
Baltimore, January 18, 1849. Feb. 1

VALUABLE LAND FOR SALE.

THE undersigned offers for sale, in one body, or in portions, or for Lease to tenants well recommended, the well known CARPENTER'S POINT FARM and Fisheries, situated in Cecil Co. Md.—at the head of the Chesapeake Bay, and on the west bank of the North East River. The shores command the waters both of the bay and the river, and are among the most valuable in the State; they include a number of buildings and sheds necessary for the active prosecution of the fisheries; the land is of easy cultivation, and enjoys the advantages of ready access by water communication, to the markets of Havre de Grace and Baltimore. The entire tract contains about 650 acres, of which some 125 are under actual cultivation, as many more lying out as common, whilst of the remainder one half has been recently cleared and the other is very heavily timbered.

For further information, or for wood-cut map showing the position and shape of the property, and the prominent places in its vicinity, application may be made to George Earle, Elkton, Md.—J. F. Houston, Columbia, Pa.—J. S. Skinner & Son, Phila.—the office of this paper, or to

m1 J. HOWARD McHENRY, Baltimore.

CHEMICAL MANURE,

Manufactured by the "George Bommer New York Manure Company."

THIS Manure is made chiefly of Fecal matter from the sinks, in which is mixed a small portion of substances that are of themselves powerful agents of vegetation, and possess the virtue to fix and retain the ammoniacal gas of the matter.

The great desideratum of the agriculturist has always been, to find out some process by which excrements might be solidified quickly, and all their fertilizing properties so strongly retained, that the manure may dissolve slowly in proportion to the requirements of the plants, and therefore, produce its effects for a time equal to that of farm manure.—This process was at length discovered by the French Chemists, and is now practically carried out with complete success in more than sixty of the large cities in France, where such factories are in full operation.

The "G. B. N. Y. M. Co." has established a Factory, on an extensive scale, near the city of New York, in which they manufacture this kind of manure, and as the fecal matter can be obtained in this country at less expense than in France, the manure will not only be made stronger, but will be sold at a price less than in the French cities, this price being so established as to afford only the reasonable remuneration to which we are honestly entitled, the more so, as its manufacture is not of the most agreeable kind, and withal troublesome and laborious.

The manufacturing department is under the special charge of George Bommer, esq., who has a perfect scientific and practical knowledge of manure matters generally, and the company has established a standard for the strength of its manure from which it is intended not to deviate, so that its customers may at all times be furnished with an article really worth what they pay for it. Our manure is an inodorous grain, and as the substances from which it is made contain of themselves all the elements necessary to the fertilization of the soil and growth of plants, it is extremely well adapted to such purposes.

To manure an acre highly, it requires 12 to 15 barrels or 36 to 45 bushels spread broadcast. Applied in hills, one half of this quantity will suffice. Its application is simple and easy, and printed instructions for its use will accompany every parcel sent to order.

We desire it to be remembered, that our manure has no similarity to another, known under the name of "Poudrette," although the principal componen of ours (the Fecal matter) is the same as that which is used in poudrette in a much less proportion; our auxiliary substances, as well as our manufacturing process, are altogether of a different nature and kind.

It belongs not to us to eulogize further the quality of our manure, what we desire at present is, to call upon the members of the agricultural community to try it! and we have reasons to assure them, that they will find it the most profitable manure they ever used.

Price, taken at the Factory:

37½ cents per bushel, without package; 50 cents per bushel, packed in barrels; or, $1.50 per barrel, package included.

Orders addressed to the above company at this office, 72 Greenwich-st., New York, will be promptly attended to.

By order of the Board of Directors,
GEORGE BOMMER, Director.

New York, January, 1849.

☞The Factory will be in full operation early in the spring, and manure can be had in April next, and at any time afterwards. Feb. 1-tf.

LIME—LIME.—The subscriber is prepared to furnish from his depot at the City Block, Baltimore, ALUM STONE LIME of the purest description, deliverable at any point on the Chesapeak Bay or its tributaries, at such prices as cannot fail to please.

He is also prepared to furnish superior building Lime at 25c. per bushel, in hhds., or at $1 per bbl. E. J. COOPER,
july 1 City Block, Baltimore.

AGRICULTURAL IMPLEMENTS.—LABOR SAVING MACHINERY.—*GEORGE PAGE*, Machinist & Manufacturer, Baltimore st. West of Schroeder st. Baltimore, is now prepared to supply Agriculturists and all others in want of Agricultural and Labor-saving MACHINERY, with any thing in his line. He can furnish Portable Saw Mills to go by steam, horse or water power; Lumber Wheels; Horse Powers of various sizes, ranging in price from $85 to $200, and each simple, strong and powerful. His *Horse Power & Thrashing Machine*, he is prepared to supply at the low price of $125 complete; the Thrashing Machines without the horse power, according to size, at $30, 40, 65 and $75; Improved Seed and Corn Planter, Portable Tobacco Press; Portable Grist Mills complete, $12.

ASPHALTED ROOFING FELT.—This felt is highly recommended as a durable roofing for houses, as also for the use of railways, and for sheeting ship bottoms. It is much used in England, where it is patented, and testimonials can be produced of the high estimation in which it is held in that country. Further particulars can be had of the subscribers, who will receive orders for the supply of the article. A sample is also left at the office of the American Farmer.
nov. 1 GUEST & GILMORE, Baltimore.

Albion Life Insurance Company.

LONDON, NEW YORK, AND BALTIMORE.

WAS INSTITUTED IN 1805,
WITH A CAPITAL OF $5,000,000.

Example of Rates of Insurance for $100.

Age next birthday.	For one year.	For seven years.	Life without profits.	Life with profits.
25	98	1 03	1 92	2 17
30	1 06	1 13	2 19	2 48
35	1 18	1 25	2 55	2 88
40	1 31	1 44	3 00	3 39

Insurances are undertaken by the Company at all ages, from 10 to 74, and to any amount not exceeding $15,000, nor less than $500 upon any one life. Persons may reside in the Southern States or West Indies all the year by paying extra.

Prospectus with rates, and every information, can be had on application to the agents. GUEST & GILMOR,
tf jan 1 No. 50 S. Gay-st.—Baltimore.

Horse Powers, Threshing Machines, Ploughs, &c.

FOR SALE AT LESS THAN FIRST COST.

by J. S. EASTMAN,
dec 1 In the rear of 189 West P Streetsaltt.

HAYSTACK FARM FOR SALE.—I wish to sell my Farm, in the Long Green Valley, Baltimore county. It is about 15 miles from the city of Baltimore, on the Harford Turnpike Road, and adjoins the lands of J. M. Duckett, Jesse Garrett, Thomas E. Gittings and others. This Farm contains between 400 and 424 acres, of which about 180 are under cultivation, 200 in the valley, underlaid by White Limestone of superior quality, and 80 in the Ridge, recently cleared, and improved by Clover and Plaster.

The balance is woodland well covered, the growth being mainly white and black Oak, Chestnut and Hickory, all lying well for cultivation. This Farm is admirably watered, being divided into fields of 20 to 30 acres, and having running water in every field.

50 acres are well set in timothy grass in the valley, 45 in clover; the rest under grain crops; of the ridge land nearly 50 acres are in clover, well set, the balance in course of cultivation for summer crops.

The buildings are good and conveniently situated, the Dwelling of stone and wood, rough cast, containing 12 rooms in good repair. Barn 60 feet by 40, with Stabling underneath for 26 head of Cattle. Corn House, new, and holding 400 barrels of corn, Stone Quarrier, Overseer's House, and other out buildings, all insured in the Harford Co's. office, at three-fourths value, for $3,900. An excellent Lime Kiln conveniently situated, burning 1000 bushels. A Lawn of 4 acres around the House, beautifully set in green grass.

There are two Orchards on the Farm, one of Cider Apples, one of Pippins. One of the fields contains a bed of Iron ore, believed to be of excellent quality, 4½ miles from the Furnace of R. Howard & Co. on Gunpowder Falls.

This Farm has long had the reputation of being one of the most valuable Farms in the county, and has been for 14 years past under an improving system. The fences and ditches are in excellent condition, and the soil, naturally of great fertility, has been highly improved by lime and barn-yard manure, deep and thorough cultivation, and under draining.

The valley part is peculiarly adapted to grazing, producing green grass spontaneously and rapidly. Limestone sells readily at the quarries for 5 to 6 cents per bushel, and Lime at 15 cents at the kiln, great demand for both. The neighborhood is good and perfectly healthy.

The farm is susceptible of division, and will be divided to suit purchasers. The terms of sale will be accommodating and possession given by the 1st of September. For further information address the subscriber, at Fork Meeting House Post Office, Baltimore county. my1 WILSON M. CARY.

A great Chance for Speculation!

A VALUABLE TRACT OF LAND, containing 1120 acres, situated in Westmoreland Co., Va., is offered for sale, a great bargain, if application is made at an early day.—The Southern point of land is within 1 1-4 mile in a straight line of the Rappahannock river, and opposite a point two miles from Leedstown, one of the stopping places of the steamboat Mary Washington, on her route from Baltimore to Fredericksburg. Between 900 and 1000 acres of this tract are in heavy wood and timber, hickory, oak, walnut and pine.—It has a water power on it, occupied by a small grist mill; a Frame House with brick foundations, the roof and weather boarding of which is somewhat out of repair. The land is of superior quality for farming purposes; it lays undulating, is well watered, and perfectly healthy. it is believed that there is not an acre of the land that is not based upon a bed of marl. The right of way is secured from the land to the river—and there are advantages connected with this right which will be more fully explained to those wishing to purchase. Apart from farming operations, it is certainly a fine field for a timber and firewood operation—and it is perhaps one of the best opportunities recently offered to industrious farmers, disposed to settle in an eligible location. The taxes in Virginia are very light, compared with other States. For further particulars apply (if by letter post paid) to Mr. S. SANDS, at the office of the American Farmer. A plot of the tract may be examined at the Maryland State Agricultural Society's Rooms in Baltimore. If sold in one tract, which would be preferred, $5 PER ACRE would be taken for it.

☞The Village Record, West Chester, Pa., will publish the above 3 times, and charge the Farmer Office. my 1-4t.

A SITUATION is wanted by a man who is well qualified to manage a Farm, and who has been engaged on one of the best farms in the vicinity of the city. He can produce the most undoubted testimonial of his character and qualifications. He is a single man, but has a sister who is well acquainted with the management of the Dairy, and a brother who is a good gardener, who would engage at the same time. Apply to the Editor of the Farmer, who can give further particulars. my 1-1t.

Book and Job Printing neatly executed at this office.

PEACH AND OTHER FRUIT TREES FOR SALE. The subscriber appointed Agent for the sale of Fruit and Ornamental Trees, grown at the Fair View Nurseries, Moorestown, N. J., offers for sale the following choice Fruit Trees: Peach Trees, of the choicest varieties, ripening in succession from the earliest to the latest: Apple; Pear; Plum; Cherry; Apricot; Nectarine. The Fruit Trees are all inoculated or grafted with the best varieties, now cultivated for market.

And a fine lot of Ornamental Trees and Shrubbery, &c. Apply to JOHN ALLEN,
my 1-1t* City Block.

WATER POWER.—For sale, with about 2 Acres of Land, 1¼ miles from the Depot at Bladensburg, Prince George's county, Md., on a never failing stream, about nineteen and a half feet fall. This property is admirably suited for a factory, as it is on a never failing stream—and will be sold on very liberal terms. Enquire of the Editor of the American Farmer. Terms will be made satisfactory.
March 31, 1849. my 1

GUANO.

PERUVIAN, PATAGONIAN, and other varieties, warranted genuine, and of the latest importations—for sale on accommodating terms, by S. FENBY & BRO.
cor. Gay and Pratt-sts.
Also, Ground Plaster in bbls. my 1

Guano! Guano! Guano!

PERUVIAN GUANO, Amaises cargo, in cotton bags—Patagonian Guano, African do. Chilina do., for sale in lots to suit purchasers, by T. W. & L. LEVERING,
No. 114 Pratt-st. Wharf.
Also, Clover Seed, Timothy Seed, Orchard Grass, Herds' Grass, &c. my 1

BONE-DUST AND POUDRETTE ESTABLISHMENT.
On Harris' Creek, at Canton, Baltimore.

THOMAS BANES, continues the manufacture of *POUDRETTE*, and is prepared to supply any orders for the same—The article manufactured by him, will be found probably more valuable than any made in the Eastern cities. His *BONE-DUST* weighs from 55 to 60 lbs. to the bushel, and is as fine as any article sold in this market. Price of Bone Dust, 55 cents per bushel. Poudrette, $1.20 per barrel. Persons sending their carts or wagons to the factory, can obtain the Poudrette at 20 cents per bushel.

☞Any orders left at the factory, or with Mr. S. SANDS, editor of the "*Farmer*," at the State Agricultural Society's Rooms, will receive immediate attention. Terms, cash.
my 1-tf.

GUANO! GUANO!!

PERUVIAN GUANO, Government importation, handsomely bagged in white cotton bags. Patagonian Guano, selected by persons left on the coast for that purpose, very dry and strong, and in fine order for sowing; in bags or barrels. Saldana Bay Guano, in casks barrels, or bags.

Ground Bones, Clover and Timothy Seed, for sale at the very lowest rates, by W. WHITELOCK.
Cor. Cay and High streets.

Clubs and dealers will be furnished with Guano on favorable terms. my 1-2t.

PERUVIAN GUANO.

THE cargoes of the ships Xylon and Deucalion of direct importation into this port, and found by the State Inspector to be of the very best quality. This Guano has been put in good new Cotton Osnaburg bags. For sale by
feb 1. JAMES I. FISHER, No. 76 *Spear's Wharf.*

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